

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO., LTD., SAMSUNG ELECTRONICS
AMERICA, INC., AND SAMSUNG DISPLAY CO., LTD.,
Petitioner,

v.

POLARIS POWERLED TECHNOLOGIES, LLC,
Patent Owner.

Case No. IPR2018-01262
Patent No. 8,223,117

PATENT OWNER'S PRELIMINARY RESPONSE

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LIST OF EXHIBITS

Exhibit No.	Description
2001	Declaration of Robert F. Kramer
2002	Declaration of Victor Roberts, Ph.D.
2003	Curriculum Vitae of Victor Roberts, Ph.D.
2004	List of Materials Considered by Victor Roberts, Ph.D.
2005	Joint Claim Construction and Prehearing Statement
2006	Polaris Opening Claim Construction Brief
2007	Declaration of Phillip C.D. Hobbs
2008	Excerpts from American Heritage Dictionary
2009	Excerpts from Random House Webster's College Dictionary
2010	U.S. Patent No. 5,089,748 A

I. INTRODUCTION

Polaris PowerLED Technologies, LLC (“Polaris” or “Patent Owner”) submits this Preliminary Response to the Petition filed by Samsung Electronics America, Inc., Samsung Electronics Co., Ltd., and Samsung Display Co., Ltd. (collectively, “Samsung” or “Petitioner”) requesting *inter partes* review of claims 1–20 of U.S. Patent No. 8,223,117 (“’117 patent”). Patent Owner respectfully requests that the Patent Trial and Appeal Board (“Board” or “PTAB”) decline institution of an *inter partes* review of the ’117 patent because Petitioner has failed to show a reasonable likelihood of prevailing as to any of the challenged claims.

Petitioner has asserted that all challenged claims are obvious over the prior art. With regard to the three independent claims of the ’117 patent (*i.e.*, claims 1, 15, and 19), Petitioner asserts one ground of obviousness based on U.S. Patent No. 5,554,912 (“Thayer”) in view of European Patent Application 0570037 (“Godwin”). However, Petitioner fails to establish a reasonable likelihood of prevailing for at least the following reasons.

First, Petitioner improperly fails to state the differences between the challenged claims and each of Thayer and Godwin preventing a meaningful, fact based obviousness inquiry. *Graham v. John Deere Co. of Kan. City*, 383 U.S. 1, 17–18 (1966). Petitioner cites both references for virtually every claim element making it unclear whether Petitioner is relying on Thayer, Godwin, or some

unexplained combination of both. Without knowing what limitations are missing from each reference, it is impossible to know *how* Petitioner is combining Thayer and Godwin.

Second, Petitioner improperly fails to state *how* Thayer and Godwin would be combined into a single, operable system, which is a “prerequisite” for a finding of obviousness. *Personal Web Techs., LLC v. Apple Inc.*, 848 F.3d 987, 993–994 (Fed. Cir. 2017).

Third, whereas Petitioner argues that Thayer and Godwin *could* be combined, Petitioner fails to provide any factual basis for *why* a person of ordinary skill in the art (“POSA”) *would* be motivated to combine the references.

Fourth, Thayer, which is designed to have *varying* contrast ratios at different ambient light levels, cannot be combined with Godwin, which maintains a *constant* contrast ratio.

Fifth, the prior art does not disclose the limitations of independent claims 1, 15, and 19. 37 C.F.R. §42.104(b)(4). For example, Petitioner does not identify where Thayer and Godwin disclose “selectively generate” in claim 1 or “selectively multiplying” in claim 15. Petitioner fails to address these limitations in its Petition. For claim 19, Petitioner does not identify any corresponding structure in Thayer and Godwin for the “means for multiplying” and the “means for adjusting” limitations under either Petitioner’s or Patent Owner’s constructions.

For all independent claims, Petitioner does not identify where Thayer and Godwin disclose “dark level bias,” “adjusting the combined signal,” or “brightness control signal.” Again, Petitioner completely fails to address these limitations in its Petition.

For these reasons, the Petitioner fails to demonstrate a reasonable likelihood of prevailing.

II. OVERVIEW OF '117 PATENT

The '117 patent is entitled “Method and Apparatus to Control Display Brightness with Ambient Light Correction.” The '117 patent is directed to methods and apparatuses that control the brightness of a display device. Claim 1 below shows an apparatus embodying the invention.

1. A brightness control circuit with selective ambient light correction comprising:

a first input configured to receive a user signal indicative of a user selectable brightness setting;

a light sensor configured to sense ambient light and to output a sensing signal indicative of the ambient light level;

a multiplier configured to selectively generate a combined signal based on both the user signal and the sensing signal; and

a dark level bias configured to adjust the combined signal to generate a brightness control signal that is used to control a brightness level of a visible display such that the brightness control signal is maintained above a predetermined level when the ambient light level decreases to approximately zero.

Ex. 1001, 12:28–43.

As shown in claim 1, the '117 patent describes and claims a specific manner of controlling the brightness of a visible display involving a user signal indicative of a user selectable brightness setting and a sensing signal indicative of the ambient light level to generate a combined signal, which is adjusted by a dark level bias value to ensure that the brightness control signal is maintained above a predetermined level when the ambient light level decreases to approximately zero.

The advantages of controlling display brightness in accordance with the '117 patent include an increase in the battery life of a device, extending the life of the light source for the display screen giving the device a longer lifetime, and providing a better user viewing experience. Ex. 1001, 1:37–50, 2:47–53.

III. PRIOR ART

A. U.S. Patent No. 5,554,912 (“Thayer”)

Thayer teaches an adaptive display brightness control system that learns and stores the operator's preferences regarding display brightness. Ex. 1003, Abstract. The algorithm used by Thayer to learn the display brightness preferences of a particular vehicle operator is shown in Figure 4 of Thayer.

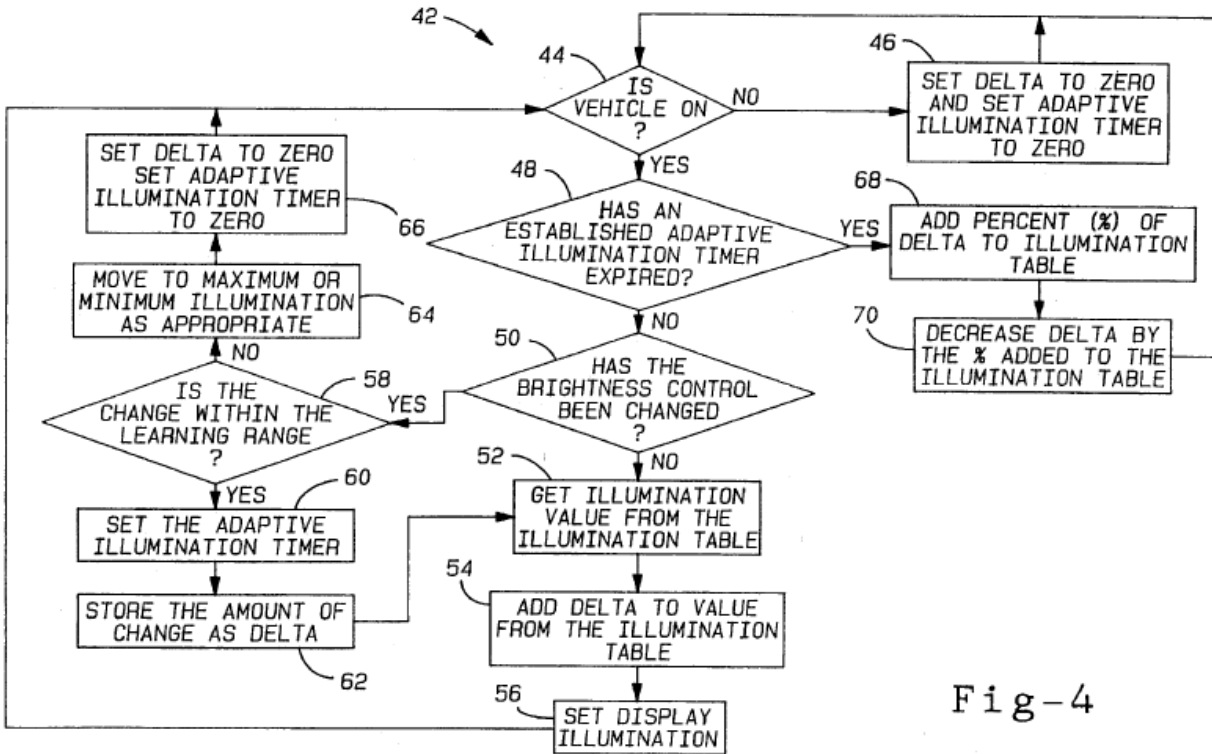


Fig-4

Ex. 1003 at Fig. 4.

Thayer operates differently under different conditions. **First**, if the operator does not adjust the brightness through “display brightness control switch 38” (e.g., dial) the system obtains an output illumination value from a look-up table for use with the display. *Id.* at Fig. 4, 4:4–9, 6:4–15; Ex. 2002, ¶23. The look-up table contains output illumination values corresponding to a range of ambient light intensity signals from the sensor. *Id.*

Second, if the operator moves the brightness control switch 38 to a different value *within* the “learning range,” the system learns the operator’s preferences. The “learning range” is some portion of the range of brightness allowed by the

brightness control switch 38. Ex. 1003 at 5:11–33; Ex. 2002, ¶¶24–30. For example, Thayer states that the learning range can be the middle 80% or middle 50% of the range of the brightness control switch 38. *Id.* When the operator moves the brightness control switch 38 to a different value within the “learning range,” the system determines the difference (*i.e.*, the “delta”) between original look-up table output illumination value and the new value set by the user via the brightness control switch 38. *Id.* After the adaptive timer has expired, the microprocessor will adjust the look-up values to a predetermined percent (*e.g.*, 25%) of the delta. Ex. 1003 at Abstract, Fig. 4, 6:41–67. By changing the look-up table values in response to the user adjusting the brightness control switch 38, the Thayer system learns and stores the preferences of the operator.

Third, if the user moves the brightness control switch 38 to a value outside the learning range (*i.e.*, too low or too high), Thayer sets the illumination at the minimum or maximum level depending on whether the brightness control switch 38 is set above or below the learning range. *Id.* at Fig. 4 (*see* steps 50, 58, 64), 6:31–40; Ex. 2002, ¶31. If the user moves the brightness control switch 38 outside of the learning range, the Thayer system sets the image intensity at the minimum or maximum level regardless of the ambient light level. *Id.*

B. European Patent Application 0570037 (“Godwin”)

Godwin teaches a control system for a head-up display in an automobile that maintains a constant contrast ratio between the intensity of the projected image and the background illumination, which is defined as the ambient light intensity at the image plane (12) where the operator views the image in front of the windshield (14). Ex. 1004, 1:25–36.

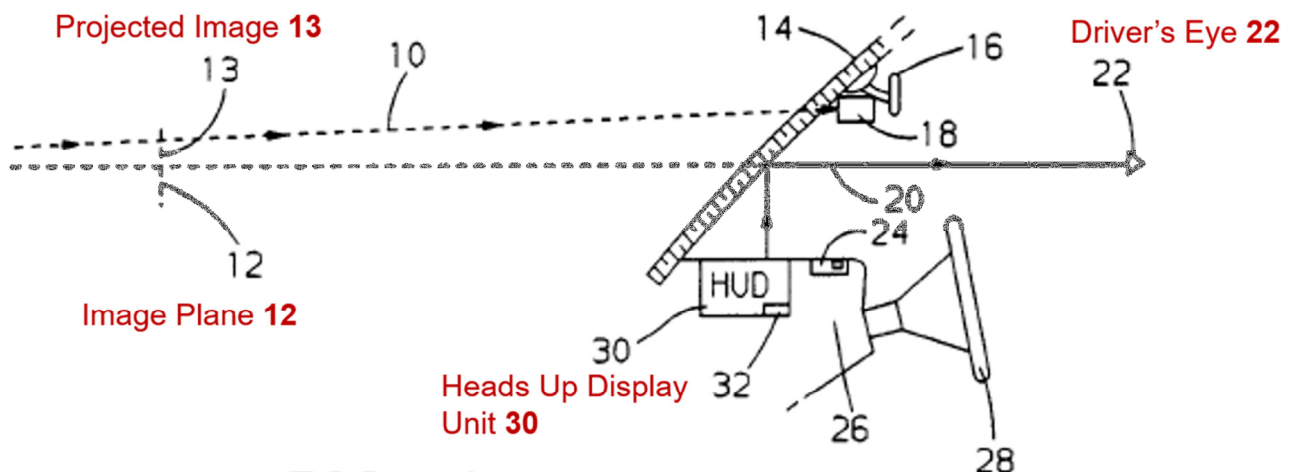


FIG. 1

Id. at Fig. 1 (emphasis added). The head-up display unit (30) projects the virtual image (13) at image plane (12) outside of the vehicle. *Id.* at Abstract, 2:29–57; Ex. 2002, ¶¶33–36. The ambient light sensor (18) measures the ambient light level at the image plane (12). Ex. 1004 at Fig. 1, 2:29–48.

Godwin includes a contrast adjuster (24) that the vehicle operator can use to change the contrast ratio of the image at the image plane (12). *Id.* at 3:1–7, 3:43–45, 9:1–4; Ex. 2002, ¶¶37–38. Godwin teaches that the control system maintains the constant contrast ratio set by the operator. Ex. 1004 at 3:57–4:6.

Figure 3 shows an algorithm for the Godwin system.

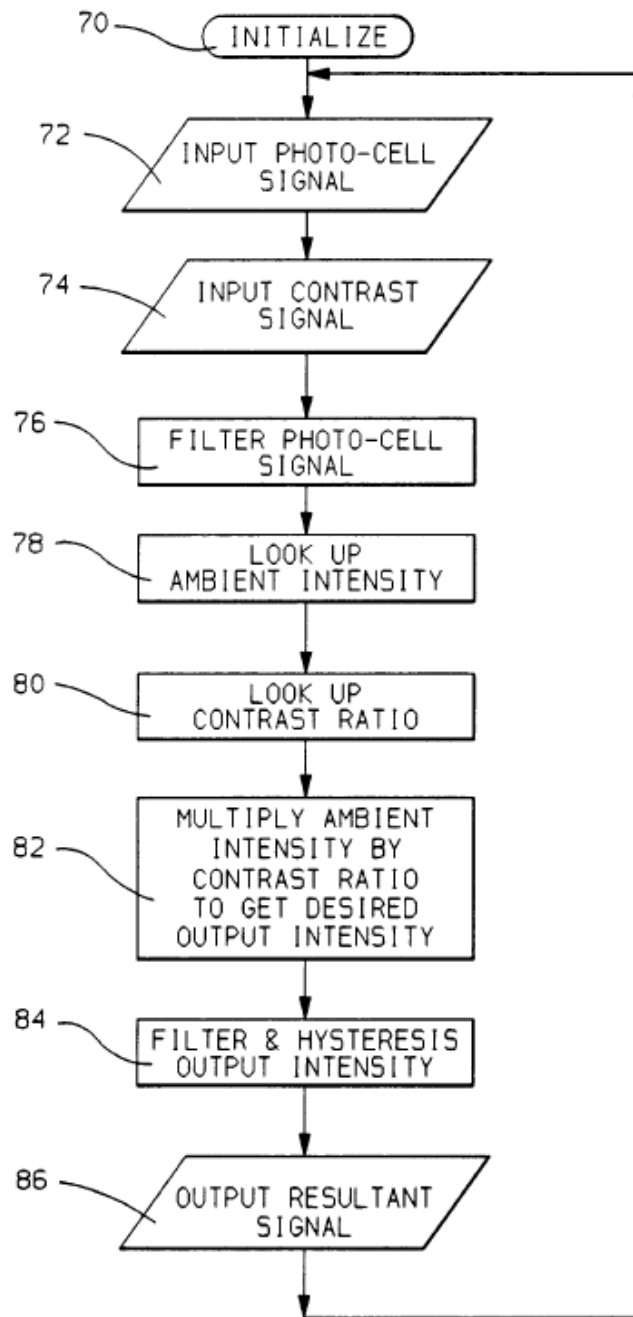


FIG. 3

Id. at Fig. 3. In step 70, the system is initialized. *Id.* at Fig. 3, 4:7–14; Ex. 2002, ¶¶40–42. At step 72, the microprocessor inputs the signal from the ambient light

sensor. *Id.* In step 74, the microprocessor receives a signal from the contrast adjuster 24. *Id.* At step 76, the microprocessor may filter the signal to smooth out rapid ambient light variations caused by, for example, driving “on a bright sunny day down a road shaded with trees through which various pockets of sunlight shine.” Ex. 1004 at Fig. 3, 4:15–33. Then, in step 78, the microprocessor retrieves a stored value from a look-up table that corresponds to the filtered ambient light signal from the sensor. *Id.* at Fig. 3, 4:37–40; Ex. 2002, ¶¶40–42. In step 80, the microprocessor retrieves a stored value from a different look-up table that corresponds to the user adjustable contrast ratio signal. Ex. 1004 at Fig. 3, 4:43–46. The look-up tables for both the ambient light signal and the user contrast control are stored in read-only memory so the values in the look-up tables cannot be changed during operation. *Id.* at 4:38–39, 4:44–45.

IV. CLAIM CONSTRUCTION

A. Petitioner Proposes Significantly Different Constructions in IPR and District Court

Petitioner’s proposed constructions are incorrect and unsupported by intrinsic evidence. Having proposed unreasonably broad constructions in its Petition, Petitioner now proposes significantly different and narrower constructions in the district court arguing that the “intrinsic evidence” requires the narrower, district court constructions. Ex. 2005 at Exhibit A at 1, 4, 7, 10. Given its narrower constructions in the district court, Petitioner’s statement that “Petitioner

believes the claim constructions offered herein would not change even if *Phillips* were applied” appears to be disingenuous. Petition at 15 n.3.

Rather than proposing constructions based on intrinsic evidence, Petitioner asserts unreasonably broad constructions by falsely stating that they are the Patent Owner’s constructions allegedly from its infringement contentions. Patent Owner *never* proposed any constructions in its infringement contentions, which discussed the operation of the accused products *not* claim construction. Petitioner’s constructions in the Petition are significantly different from both Petitioner’s and Patent Owner’s constructions in the district court. Ex. 2005 at Exhibit A.

Below, Patent Owner addresses the proper construction of the claims based on the intrinsic evidence. All claims of the ’117 patent are patentable over the prior art under both Petitioner’s and Patent Owner’s proposed constructions.

B. “A multiplier configured to selectively generate a combined signal based on both the user signal and the sensing signal” (claim 1)

“Selectively multiplying the input signal with a sense signal to generate a combined signal” (claim 15)

“Means for multiplying the input signal with the sense signal to generate a combined signal” (claim 19)

Claim Term	Patent Owner Construction
“a multiplier configured to selectively generate a combined signal based on both the user signal and the sensing signal” (Claim 1)	“a multiplier configured to generate on a selective basis a combined signal based on both the user signal and the sensing signal”

“selectively multiplying the input signal with a sense signal to generate a combined signal” (Claim 15)	“multiplying on a selective basis the input signal with a sense signal to generate a combined signal”
“means for multiplying the input signal with the sense signal to generate a combined signal” (Claim 19)	Function: multiplying the input signal with the sense signal to generate a combined signal Structure: (1) a pair of current steering diodes and a network of resistors or (2) a digital-to-analog converter or (3) a pair of current-steering diodes having commonly connected anodes coupled to the sensing signal and respective cathodes coupled to the user signal and a network of resistors or (4) an isolation diode having an anode coupled to the sensing signal and a cathode coupled to the user adjustable potentiometer and a network of resistors

“Absent lexicography or disavowal, we do not depart from the plain meaning of the claims.” *Luminara Worldwide, LLC v. Liown Elecs. Co. Ltd.*, 814 F.3d 1343, 1353 (Fed. Cir. 2016). Because there is no lexicography or disavowal, “a multiplier configured to selectively generate a combined signal based on both the user signal and the sensing signal” and “selectively multiplying the input signal with a sense signal to generate a combined signal” should be given their plain and ordinary meaning as Patent Owner proposes.

In the district court, there is no dispute between the parties that a “multiplier” has to perform multiplication. Ex. 2006 (Polaris Br.) at 4; Ex. 2005, Ex. A at 1, 4.

Dr. Hobbs, Petitioner's expert, has testified under oath that "multiplier" refers to "a device that performs multiplication." Ex. 2007, ¶37. The "multiplier" may be implemented, for example, in a "software algorithm," "analog circuitry," and/or "mixed-signal circuitry." Ex. 1001 at 2:7–16, 5:37–5:38, 14:10–13.

Claim 1 contains the limitation "selectively generate," and claim 15 requires "selectively multiplying." The plain meaning of "selectively" is "on a selective basis." Ex. 2005 at Exhibit A at 1; *see also*, Ex. 2008 at 5; Ex. 2009 at 6. The specification describes performing ambient light correction on a selective basis when particular conditions are met (*e.g.*, when an "auto" mode is enabled) and not performing it under other conditions (*e.g.*, when a "manual" mode is enabled). Ex. 1001, 2:17–30. Patent Owner's plain meaning construction is consistent with the intrinsic evidence.

In claim 19, "means for multiplying the input signal with the sense signal to generate a combined signal" is a means-plus-function term under 35 U.S.C. §112, ¶6. The claimed function is "multiplying the input signal with the sense signal to generate a combined signal." The corresponding structure for the claimed function and where it is found in the specification is shown below:

1. a pair of current steering diodes and a network of resistors (Ex. 1001, 3:38–47, 6:33–7:48, 13:7–12);
2. a digital-to-analog converter (*id.* at 3:59–4:4, 13:20–24);

3. a pair of current-steering diodes having commonly connected anodes coupled to the sensing signal and respective cathodes coupled to the user signal and a network of resistors (*id.* at 3:38–47, 6:33–7:48, 13:7–12);
4. an isolation diode having an anode coupled to the sensing signal and a cathode coupled to the user adjustable potentiometer and a network of resistors (*id.* at 9:47–60, 10:44–61, 13:13–19).

Petitioner proposes the following incorrect constructions of these terms:

Claim Term	Petitioner IPR Construction
“a <u>multiplier</u> configured to <u>selectively</u> generate a combined signal based on both the user signal and the sensing signal” (Claim 1)	“they encompass hardware or software for generating a combined signal from both a user input and a sensing signal” (Petition at 16)
“ <u>selectively multiplying</u> the input signal with a sense signal to generate a combined signal” (Claim 15)	“they encompass hardware or software for generating a combined signal from both a user input and a sensing signal” (Petition at 16)
“means for <u>multiplying</u> the input signal with the sense signal to generate a combined signal” (claim 19)	“they encompass hardware or software for generating a combined signal from both a user input and a sensing signal” (Petition at 16)

Petitioner’s constructions are incorrect. **First**, Petitioner fails to construe the claim language. Petitioner states that “they encompass hardware or software for generating a combined signal from both a user input and a sensing signal.” Petition at 16. This is a statement of what these claims cover **not** what the claim language means. The fact that the alleged “construction” is literally the same for

the three different phrases conclusively shows that Petitioner did not construe the actual words of the claims. Petitioner's constructions should thus be rejected.

Second, Petitioner has improperly used claim construction to delete explicit limitations from the claims. Petitioner's construction improperly **deletes** **"selectively"** from claims 1 and 15 thereby rendering this limitation superfluous with no meaning, which is legal error. *Digital-Vending Servs. Int'l., LLC v. Univ. of Phoenix, Inc.*, 672 F.3d 1270, 1275 (Fed. Cir. 2012) (affirming "the well-established rule that 'claims are interpreted with an eye toward giving effect to all terms in the claims'"); *In re Gabapentin*, 503 F.3d 1254, 1263–64 (Fed. Cir. 2007) (rejecting Appellee's construction that would render "of a mineral acid" meaningless); *Akzo Nobel Coatings, Inc. v. Dow Chem. Co.*, 811 F.3d 1334, 1340 (Fed. Cir. 2016) (rejecting construction that would render "collection" in "pressurized collection vessel" superfluous); *Agilent Techs., Inc. v. Affymetrix, Inc.*, 567 F.3d 1366, 1377–78 (Fed. Cir. 2009) (reversing district court's construction of the term "closed chamber" for failing to give meaning to "closed" thus rendering it superfluous). Contrary to Petitioner's constructions, "selectively" needs to have a meaning within the claims.

Third, Petitioner's IPR construction improperly **deletes** **"multiplier"** and **"multiplying"** from claims 1, 15, and 19, respectively, rendering these limitations superfluous with no meaning. This is clear legal error. Ex. 1001. Petitioner's

construction is also contrary to the intrinsic evidence. The specification states that “the ***multiplier*** circuit generates the brightness control signal using a ***multiplying function*** to correct for ambient light variations.” *Id.*, 3:31–3:33 (emphasis added). Since multiplication is shown in the embodiments and the claims, Petitioner’s attempt to delete “multiplier” and “multiplying” from the claims would improperly exclude the preferred embodiments. *MBO Labs, Inc. v. Becton, Dickinson & Co.*, 474 F.3d 1323, 1333 (Fed. Cir. 2007); Ex. 1001, Abstract, Figs. 1, 2, 2:7–16, 3:31–4:4, 4:45–5:43, 7:15–35, 12:48–51.

Fourth, for claim 19, Petitioner failed to comply with 37 C.F.R. §42.104(b)(3) regarding the “means for multiplying...” limitation, which is a means-plus-function limitation under 35 U.S.C. §112, ¶6. Petitioner first applies the wrong claimed function. The proper function is “multiplying the input signal with the sense signal to generate a combined signal,” which is the language of claim 19. Ex. 1001, col. 14:22–32. However, Petitioner’s construction applies the wrong function of “generating a combined signal from both a user input and a sensing signal,” which is substantially different than the claim language as it improperly deletes “multiplying” from “means for multiplying the input signal with the sense signal.” Petition at 16; Ex. 1001, 14:22–32. Petitioner does not identify any structure that performs the correct claimed function. Whereas Petitioner mentions “hardware and software” with no clear citations to the

specification, these are insufficient structures as the Petitioner identifies no software algorithm or specific hardware for performing the claimed function. *Mass. Inst. of Tech. v. Abacus Software*, 462 F.3d 1344, 1362–1363 (Fed. Cir. 2006) (holding that “hardware and software” are insufficient corresponding structures because it “does not elucidate a *definite* structure, but merely suggests *some* generic structure, namely, some unspecified arrangement of unidentified hardware components or software”) (emphasis in original); *Eon Corp. v. AT&T Mobility LLC*, 785 F.3d 616, 621 (Fed. Cir. 2015) (“It is well-established that the corresponding structure for a function performed by a software algorithm is the algorithm itself.”). Petitioner’s failure to comply with 37 C.F.R. §42.104(b)(3) requires denial of the Petition regarding claims 19–20.

C. “A dark level bias configured to adjust the combined signal to generate a brightness control signal that is used to control a brightness level of a visible display such that the brightness control signal is maintained above a predetermined level when the ambient light level decreases to approximately zero” (claim 1)

“adjusting the combined signal with a dark level bias to generate a brightness control signal for controlling brightness of a visible display such that the brightness control signal is maintained above a predetermined level when the ambient light level decreases to approximately zero” (claim 15)

“means for adjusting the combined signal with a dark level bias to generate a brightness control signal that is maintained above a minimum level when the ambient light level decreases to approximately zero” (claim 19)

Claim Term	Patent Owner Construction
“a dark level bias configured to adjust the combined signal” (claim 1)	“a dark level bias (<i>i.e.</i> , a value) configured to adjust the combined signal”
“adjusting the combined signal with a dark level bias” (claim 15)	“adjusting the combined signal with a dark level bias (<i>i.e.</i> , a value)”

“Absent lexicography or disavowal, we do not depart from the plain meaning of the claims.” *Luminara*, 814 F.3d at 1353. Because there is no lexicography or disavowal, “a dark level bias configured to adjust the combined signal...” in claim 1 and “adjusting the combined signal with a dark level bias...” in claim 15 should be given their plain and ordinary meaning. Petitioner, Petitioner’s expert, and Patent Owner all agree that a “dark level bias” is a value. Ex. 2005, Exhibit A at 7, 10; Ex. 1029, ¶¶40–44. Therefore, the Patent Owner’s construction should be adopted.

Petitioner proposes that these phrases from claims 1 and 15 should be construed as “they encompass software for adjusting the combined signal in order to maintain brightness above a predetermined level when the ambient light level decreases to approximately zero.” Petition at 17–18. Petitioner’s constructions are incorrect. **First**, Petitioner’s construction states what the claims allegedly cover and **not** what the claim language means. The fact that Petitioner’s construction is

literally the same for the different phrases shows that Petitioner did not construe the actual words of the claims.

Second, Petitioner’s construction in its Petition improperly deletes several explicit limitations from claims 1 and 15 including “dark level bias,” “generate a brightness control signal,” “brightness control signal,” and “brightness level of a visible display” thereby rendering these explicit limitations superfluous with no meaning.

Claim Term	Petitioner’s Construction
“a <i>dark level bias configured to</i> adjust the combined signal to <i>generate a brightness control signal that is used to control a brightness level of a visible display such that the brightness control signal</i> is maintained above a predetermined level when the ambient light level decreases to approximately zero” (claim 1)	“they encompass software for adjusting the combined signal in order to maintain brightness above a predetermined level when the ambient light level decreases to approximately zero.” Petition at 17–18.
“adjusting the combined signal <i>with a dark level bias</i> to <i>generate a brightness control signal</i> for <i>controlling brightness of a visible display</i> such that <i>the brightness control signal is maintained</i> above a predetermined level when the ambient light level decreases to approximately zero” (claim 15)	“they encompass software for adjusting the combined signal in order to maintain brightness above a predetermined level when the ambient light level decreases to approximately zero.” Petition at 17–18.

Petitioner's construction is thus legal error. *Digital-Vending*, 672 F.3d at 1275 (affirming “the well-established rule that ‘claims are interpreted with an eye toward giving effect to all terms in the claims.’”); *Gabapentin*, 503 F.3d at 1263–64 (rejecting construction that would render “of a mineral acid” meaningless); *Akzo Nobel Coatings*, 811 F.3d at 1340 (rejecting construction that would render “collection” in “pressurized collection vessel” superfluous); *Agilent Techs.*, 567 F.3d at 1377–78 (reversing district court's construction of “closed chamber” for failing to give meaning to the word “closed”).

Third, Petitioner failed to comply with 37 C.F.R. §42.104(b)(3) regarding “means for adjusting...” in claim 19, which is a means-plus-function term under 35 U.S.C. §112, ¶6. Petitioner fails to identify the correct claimed function and corresponding structure. The proper claimed function is “adjusting the combined signal with a dark level bias to generate a brightness control signal that is maintained above a minimum level when the ambient light level decreases to approximately zero,” which is the claim language. Ex. 1001, 14:22–32. Petitioner's proposed function of “adjusting the combined signal in order to maintain brightness above a predetermined level when the ambient light level decreases to approximately zero” is different from the claim language and deletes several limitations, including “dark level bias” and “generate a brightness control signal.” Petitioner does not identify any structures that perform the correct claimed

function. To the extent that Petitioner alleges that the corresponding structure is software, Petitioner failed to disclose any corresponding algorithm. *Eon*, 785 F.3d at 621. The Petition is deficient due to a failure to comply with 37 C.F.R. §42.104(b)(3) as to claims 19–20.

V. GROUND I: ADDRESSES INDEPENDENT CLAIMS 1, 15, AND 19

The '117 patent contains three independent claims, which are claims 1, 15, and 19. Petitioner's Ground I, which is the only ground addressing the independent claims, asserts that claims 1, 15, and 19 are unpatentable under 35 U.S.C. § 103 over the combination of Thayer and Godwin. Petitioner fails to demonstrate a reasonable likelihood of prevailing and does not meet its burden with respect to claims 1, 15 and 19, and their dependent claims.

VI. GROUND I: PETITIONER FAILS TO PROVIDE FACTUAL BASIS FOR OBVIOUSNESS ANALYSIS

A claim is unpatentable as obvious if “the differences between” the claimed subject matter and the prior art “are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.” 35 U.S.C. § 103; *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including: (1) the scope and content of the prior art, (2) *any differences between the claimed subject matter and the prior art*, (3) the level of skill in the art, and (4) where in evidence,

so-called secondary considerations. *Graham*, 383 U.S. at 17–18 (emphasis added). “Thus, the obviousness inquiry is based on factual inquiries including the *differences* between the claimed invention and the prior art.” *Travelocity.com L.P. v. Cronos Techs., LLC*, CBM2014-0082, Paper 12 at 4 (October 16, 2014) (emphasis in original).

The PTAB has explained that failing to state the differences between the challenged claims and the asserted prior art prevents a “meaningful obviousness analysis under 35 U.S.C. § 103” and “fail[s] to demonstrate why a person of ordinary skill in the relevant art would combine the references.” The PTAB has explained this as follows:

[W]e determine that Petitioner fails to show where *each limitation* of challenged claims 1 and 22 *is taught by one of the combined references*...In particular, it is *not sufficient for Petitioner to assert that each of the references teaches all of the limitations* of the challenged claims 1 and 22 and then to leave it to us to apply the teachings for Petitioner to demonstrate its asserted grounds. This is especially true when Petitioner expressly forgoes asserting grounds of unpatentability based on the application of the cited references individually to the challenged claims... Petitioner has not articulated any difference between the recited [apparatus] and method and each of [the prior art references]. *Without having identified specifically the differences between the recited invention and the prior art, Petitioner has failed to make a meaningful obviousness analysis*

under 35 U.S.C. § 103(a), and, thus, has failed to establish that it is more likely than not that that independent claim 1 or 22 is unpatentable over the asserted combinations of [prior art references]. Without Petitioner having identified specifically these differences, we are unable to evaluate properly any reason offered by Petitioner for modifying [prior art references], in view of the other references

Travelocity.com, CBM2014-0082, Paper 10 at 19–20 (September 15, 2014) (emphasis added).

The PTAB further explained:

[B]ecause Petitioner failed to identify the differences between each of the applied references and the subject matter recited in the challenged claims, Petitioner failed to demonstrate why a person of ordinary skill in the relevant art would combine the references in the manner proposed to achieve the recited subject matter, as required by Graham...Nevertheless, without knowing what limitations of the recited claims are alleged to be missing from one reference and supplied by another, we concluded that Petitioner's proffered reasons for combining [prior art references] to teach or suggest the challenged claims are insufficient.

Travelocity.com, CBM2014-0082, Paper 12 at 5–6 (emphasis added).

Petitioner does not identify any differences between claims 1, 15, and 19, and the Thayer and Godwin references. Petition at 35–46. Petitioner does not state what limitations of these independent claims are missing from each of Thayer

and Godwin as is required for a meaningful obviousness analysis under *Graham*. *Travelocity.com*, CBM2014-00082, Paper 10 at 20 (denying petition for failure to identify differences between challenged claims and asserted prior art for obviousness); *Apple Inc. v. Smartflash LLC*, CBM2015-00016, Paper 23 at 24–25 (April 10, 2015) (denying petition as to obviousness grounds where petitioner failed to state “what specific teaching is lacking in [the prior art reference] (i.e., the differences between the claimed subject matter and [the prior art reference])”); *John Crane, Inc. v. Finalrod IP, LLC*, IPR2016-01786, Paper 7 at 11–14 (January 31, 2017) (denying petition for failure to identify differences between challenged claims and asserted prior art for obviousness grounds).

Despite asserting only obviousness, Petitioner cites Thayer as disclosing *every* limitation (i.e., limitations [a]-[d]) of independent claims 1, 15, and 19. Petition at 35–46. Petitioner further cites to Godwin in relation to *every* limitation and appears to assert that Godwin alone discloses at least limitations [a]-[c]. *Id.* For each of the limitations of claims 1, 15, and 19, it is unclear whether the applicant is stating that (1) Thayer discloses the limitation, (2) Thayer renders the limitation obvious, (3) Godwin discloses the limitation, (4) Godwin renders the limitation obvious, or (5) only the combination of Thayer and Godwin renders the limitation obvious. *Id.* Because the “Board must resolve all vagueness and ambiguity in Petitioner’s arguments against the Petitioner,” the Petitioner fails to

demonstrate a reasonable likelihood of prevailing. *Shopkick Inc. v. Novitaz, Inc.*, IPR2015-00279, Paper 7 at 29 (May 29, 2015).

The PTAB has consistently denied petitions based on obviousness grounds where Petitioner failed to identify the differences between the asserted claims and the prior art by citing multiple references for most or all claim limitations as the Petitioner has done here. *Travelocity.com*, CBM2014-00082, Paper 10 at 19–21 (denying petition for failure to identify differences between challenged claims and asserted prior art for obviousness where Petitioner asserted that each of the prior art references “teaches or suggests all of the limitations of each of independent claims”); *Apple*, CBM2015-00016, Paper 23 at 24–25 (denying petition as to obviousness grounds where petitioner cited one reference of the combination for all limitations of an independent claim”); *John Crane*, IPR2016-01786, Paper 7 at 11–14 (January 31, 2017) (denying petition for failure to identify differences between challenged claims and asserted prior art for obviousness where multiple references were cited for multiple claim limitations); Petition at 35–46.

Because Petitioner failed to specifically identify the differences between independent claims 1, 15, and 19 and each of Thayer and Godwin (*i.e.*, what limitations of each claim are missing from each of Thayer and Godwin), Petitioner has failed to set forth the factual basis for a meaningful obviousness analysis under 35 U.S.C. § 103, and has failed to establish a reasonable likelihood of prevailing

on any challenged claim thereby requiring denial of the Petition. *Graham*, 383 U.S. at 17–18; *Travelocity.com*, CBM2014-00082, Paper 10 at 19–21; *Apple*, CBM2015-00016, Paper 23 at 24–25; *John Crane*, IPR2016-01786, Paper 7 at 11–14. Without knowing what limitations are alleged to be missing from Thayer and supplied by Godwin, Petitioner’s obviousness analysis is insufficient as it is unclear which references are supplying which limitations and *how* specifically the references are being combined in the alleged combination. *Id.* Therefore, in accordance with *Graham* and PTAB precedent, the Petitioner fails to demonstrate a reasonable likelihood of prevailing.

VII. GROUND I: THERE IS NO MOTIVATION TO COMBINE THAYER AND GODWIN

A. Petitioner Fails to Provide a Basis for Why a POSA Would Have Been Motivated to Modify Thayer to Add the Algorithm of Godwin

Petitioner provides no factual basis for why one of ordinary skill in the art would modify Thayer with Godwin. Petition at 32–34. *First*, Petitioner makes conclusory remarks such as “[a] POSA would have been motivated to combine the disclosures of Thayer and Godwin” and “[a] POSA would also have recognized that replacing Thayer’s algorithm with Godwin’s multiplication algorithm would have entailed a simple substitution of one element (Godwin’s multiplication algorithm) for another (Thayer’s brightness calculation algorithm), yielding predictable results.” *Id.* at 32–33. These conclusory statements are insufficient

and unsupported by evidence. *Kinetic Techs., Inc. v. Skyworks Sols., Inc.*, IPR2014-00529, Paper 8 at 15 (September 13, 2014) (“Petitioner’s and [expert’s] statements of general principles from the case law” are “not a substitute for a fact-based analysis of the proposed combination of references.”). Petitioner cites numerous similarly conclusory paragraphs of Dr. Hobbs’ declaration, which is an improper incorporation by reference. *Cisco Sys., Inc. v. C-Cation Techs., LLC*, Case IPR2014-00454, Paper 12 at 9 (Aug. 29, 2014) (“This practice of citing the Declaration to support conclusory statements that are not otherwise supported in the Petition also amounts to incorporation by reference.”).

Second, Petitioner’s remaining arguments do not address *why* one of skill in the art would have been motivated to modify Thayer to incorporate the algorithm of Godwin. Petitioner argues that Thayer and Godwin are in the same field (*i.e.*, “vehicle displays”) and have the same generic components (*i.e.*, “ambient light sensor” and “microprocessor”). Petition at 33. However, “[t]he existence of common elements found in both the challenged claims and the references relied on by Petitioner does not establish that the challenged claims would have been obvious.” *Kinetic Techs.*, IPR2014-00529, Paper 8 at 15; *KSR*, 550 U.S. at 418.

Petitioner further argues that Godwin’s algorithm maintains a constant contrast ratio, which Petitioner argues is desirable for readability. Petition at 32–33. However, Petitioner never explains *why* a POSA would combine Godwin,

which maintains a constant contrast ratio, with Thayer, which is specifically designed to have varying contrast ratios as explained below. At best, these arguments go to whether one *could have* combine Thayer and Godwin. The portions of both the *CaptionCall* and *W. Union* cases that Petitioner cites also relate to whether one *could have* combined references with reasonable success. Petition at 33–34; *CaptionCall, LLC v. Ultratec, Inc.*, IPR2015-01358, Paper 75 at 13 (Dec. 9, 2016); *W. Union Co. v. MoneyGram Payment Sys., Inc.*, 626 F.3d 1361, 1370 (Fed. Cir. 2010).

The fact that two references *could have* been combined “*does not* imply a motivation to pick out those two references and combine them to arrive at the claimed invention.” *Personal Web*, 848 F.3d at 993–994 (emphasis added). Rather, “[o]bviousness concerns whether a skilled artisan not only could have made but would have been motivated to make the combinations or modifications of prior art to arrive at the claimed invention.” *Id.* at 994 (citation omitted). None of Petitioner’s arguments address *why* one would have been motivated to modify Thayer to add the algorithm of Godwin. Therefore, institution should be denied.

B. Petitioner Fails to Explain How Thayer and Godwin Would Have Been Combined

Petitioner does not explain *how* Thayer and Godwin would have been combined to arrive at the invention of the ’117 patent. “[A] clear, evidence-supported account of the contemplated workings of the combination is a

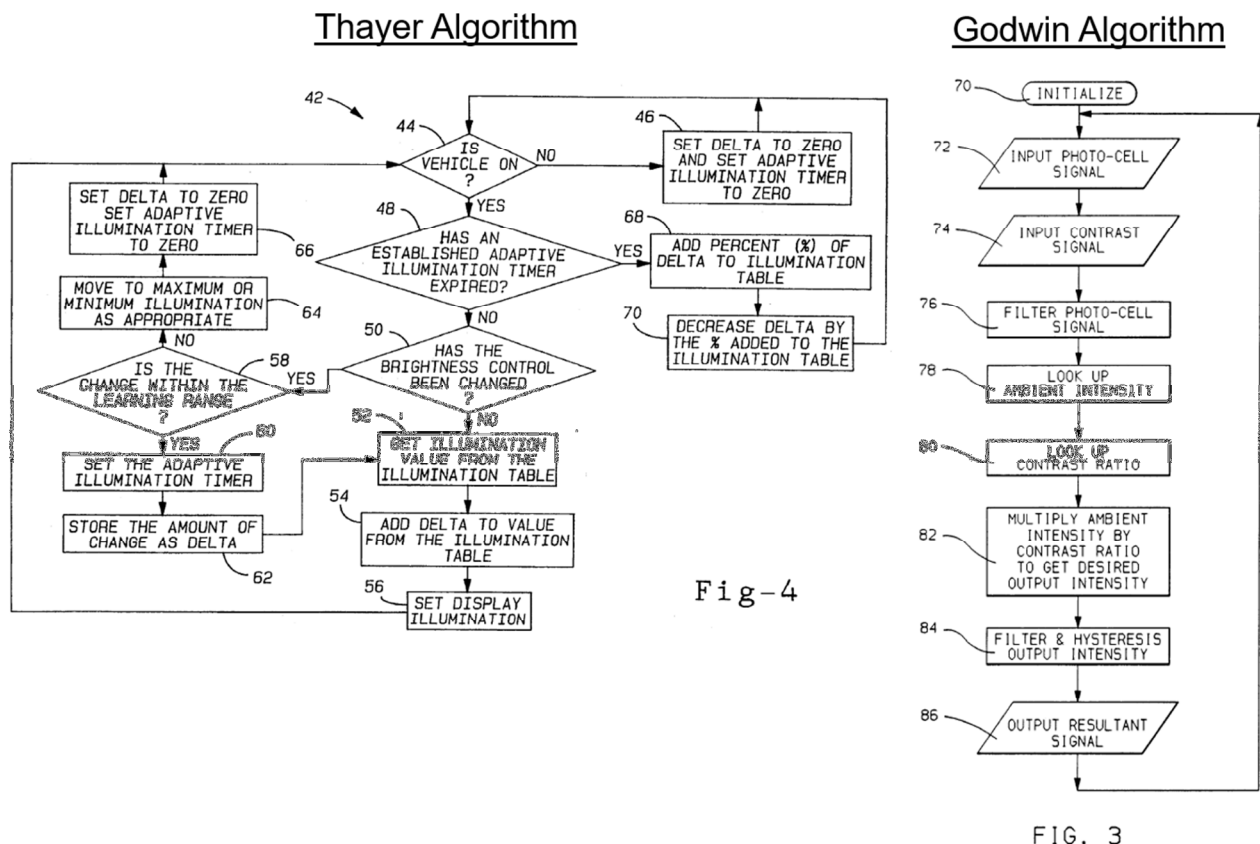
prerequisite to adequately explaining and supporting a conclusion that a relevant skilled artisan would have been motivated to make the combination and reasonably expect success in doing so.” *Personal Web*, 848 F.3d at 994; *Huawei Device Co., Ltd. v. Maxell Ltd.*, IPR2018-00246, Paper 8 at 20–21 (June 29, 2018) (denying institution for failure to sufficiently explain *how* references would be combined.). The Petition should thus be denied because Petitioner failed to provide a clear, evidence-supported account of *how* Thayer and Godwin would be combined and how such a combination would operate. Petition at 33–34.

First, as explained above, Petitioner failed to state which limitations are missing from Thayer, which is cited for all claim elements, and which limitations are supplied by Godwin. Petition at 34–46. Without knowing which limitations are supplied by which references in the proposed combination, it is impossible to know how the references are being combined and how such a combination would work.

Second, the Petitioner does not provide any evidence or explain *how* Thayer would be modified by Godwin. Petitioner’s entire explanation of how the references would be combined is a single, conclusory sentence that states: “A POSA would also have recognized that replacing Thayer’s algorithm with Godwin’s multiplication algorithm would have entailed a simple substitution of one element (Godwin’s multiplication algorithm) for another (Thayer’s brightness

calculation algorithm), yielding predictable results.” Petition at 33. This is clearly insufficient as it fails to provide *any* explanation of *how* the combination would operate and provides no evidentiary support. *Personal Web*, 848 F.3d at 994; *Huawei*, IPR2018-00246, Paper 8 at 20–21.

For example, the algorithms of Thayer and Godwin are shown below.



Ex. 1003, Fig. 4; Ex. 1004, Fig. 3. There is no explanation in the Petition regarding *how* these two different algorithms could be combined into a single operable device. The entire Thayer algorithm cannot be deleted and replaced with the Godwin algorithm because, if that were the case, the combination would not have any of the portions of Thayer expressly relied upon by Petitioner for

limitations [c] (multiplier/multiplying limitation) and [d] (dark level bias limitation) of claims 1, 15, and 19, as the portions cited are indisputably part of Thayer's algorithm. Petition at 38–46.

It is unclear how a POSA would have combined these references. For example, would the algorithm in the combination use the brightness control input of Thayer or the contrast ratio input of Godwin? Ex. 1003, Fig. 4; Ex. 1004, Fig. 3. Would the “adaptive illumination timer” (48) of Thayer remain in the combination? Ex. 1003, Fig. 4. Would the combination contain the “learning range” (58) of Thayer? *Id.* Is the minimum brightness of Thayer (64) part of the combination? *Id.* Would the filtering and hysteresis (84) of Godwin's algorithm be part of the combination? Ex. 1004, Fig. 3. Which if any of Thayer's and Godwin's lookup tables would remain? Ex. 1003, Fig. 4; Ex. 1004, Fig. 3.

The Petitioner provides no evidence or explanation about *how* the alleged combination would operate and has thus failed to establish a motivation to combine Thayer and Godwin. *Personal Web*, 848 F.3d at 994 (“[A] clear, evidence-supported account of the contemplated workings of the combination is a prerequisite to adequately explaining and supporting a conclusion that a relevant skilled artisan would have been motivated to make the combination and reasonably expect success in doing so.”); *Huawei*, IPR2018-00246, Paper 8 at 20–21 (denying institution for failure to sufficiently explain how references would be combined.).

Because the “Board must resolve all vagueness and ambiguity in Petitioner’s arguments against the Petitioner,” the Petitioner fails to demonstrate a reasonable likelihood of prevailing. *Shopkick*, IPR2015-00279, Paper 7 at 29.¹

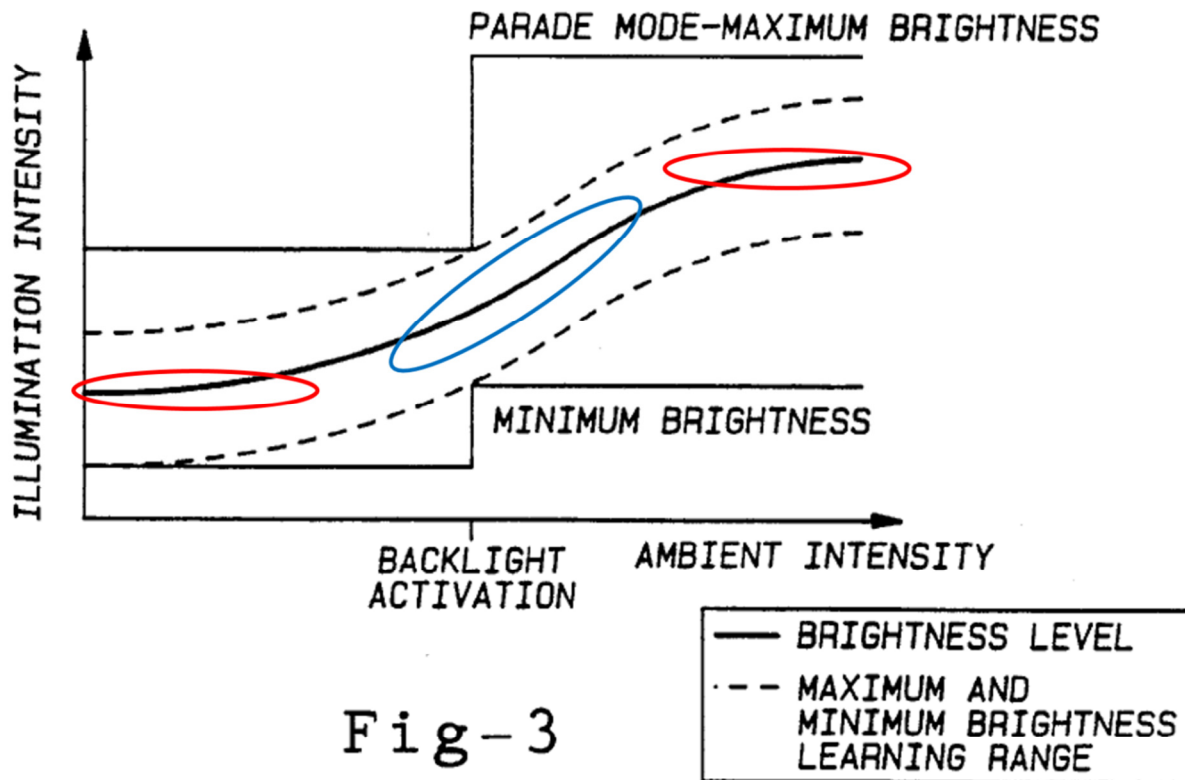
C. A POSA Would Not Have Been Motivated to Combine Thayer and Godwin Because They Have Different Principles of Operation

A POSA would not have combined Thayer with Godwin because these references are incompatible since they have different goals and different principles of operation. *First*, the algorithms of Thayer and Godwin are fundamentally different in their operation and results. Ex. 2002, ¶¶50–52. In Thayer, the vehicle is pre-programmed when manufactured with an *S-shaped curve* as shown in Figure 3. Ex. 1003, Fig. 3, 2:53–56, 5:1–11; Ex. 2002, ¶¶50–52. The predetermined S-curve can be shifted up or down based on user changes in the brightness setting. Ex. 1003, Fig. 5, 7:18–27. This pre-programmed S-curve ensures that the rate of

¹ Waiting until the Reply to unveil its best combination and *how* such a combination would work violates due process requirements. 5 U.S.C. §§ 554(b)–(c), 556(d) (Petition must identify all “the matters of fact and law asserted,” give all interested parties the opportunity to submit and consider facts and arguments, and allow a party “to submit rebuttal evidence ... as may be required for a full and true disclosure of the facts.”).

change in brightness is *different* at different ambient light levels as shown below.

Ex. 2002, ¶¶50–52.



Ex. 1003, Fig. 3 (emphasis added). In the red regions, the illumination intensity (e.g., brightness) changes little relative to changes in the ambient light intensity.

Ex. 1003, Fig. 3; Ex. 2002, ¶¶50–52. In the blue region, the illumination intensity changes significantly relative to changes in the ambient light intensity. *Id.* Godwin's algorithm does not contain a pre-programmed curve. Rather, Godwin ensures that the rate of change in output intensity is *constant* at different ambient light levels, while Thayer's rate of change is *different* at different ambient light levels. Ex. 1004, 4:50–5:18; Ex. 2002, ¶¶50–52. A POSA would not have been

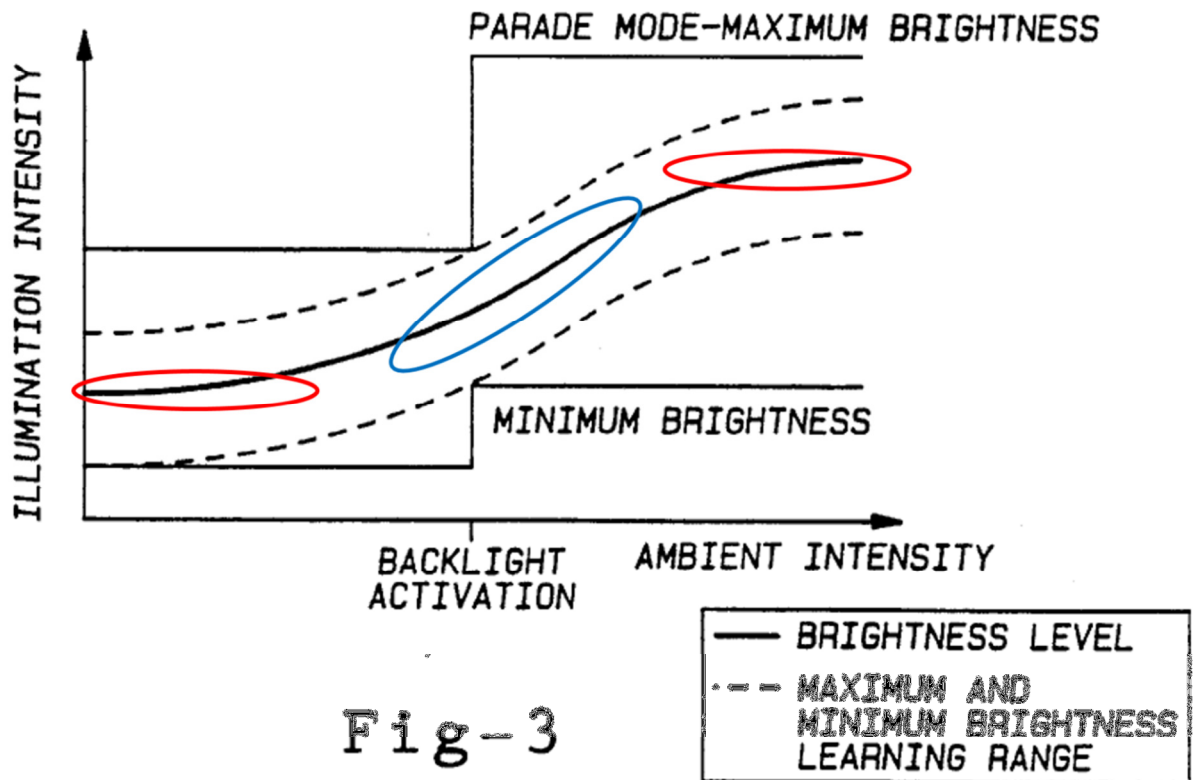
motivated to combine Thayer and Godwin, which have fundamentally different designs and performance.

Second, Thayer and Godwin together are directed to different and mutually exclusive goals. Ex. 2002, ¶53. The goal of Godwin is to provide a projected image at a “constant contrast ratio” wherein “contrast ratio” is defined as the *brightness of the projected image* divided by the background illumination (*i.e., ambient light level at the image plane*). Ex. 1004, Abstract, 1:25–32, 1:37–49, 2:6–10; 2:54–57, 3:7–14, 3:57–4:6, 5:25–33; Ex. 2002, ¶53. To maintain a constant contrast ratio, the graph of image intensity versus ambient light intensity would be linear. Ex. 2002, ¶53.

Unlike Godwin, Thayer’s algorithm is designed to have a varying contrast ratio at different ambient light intensities. Ex. 1003, Fig. 3; Ex. 2002, ¶54. Thayer thus teaches away from Godwin’s algorithm. In Thayer, the system is pre-programmed with an ***S-shaped curve*** as shown in Figure 3. Ex. 1003 at Fig. 3, 2:53–56, 5:1–11. Thayer teaches that this non-linear, S-shaped curve represents a cross-section of user preferences pre-programmed into a look-up table at the time of manufacturing. *Id.* at 5:1–11.

Godwin defines “contrast ratio” as the *brightness of the projected image* divided by the background illumination (*i.e., ambient light level at the image plane*). Ex. 1004, Abstract, 1:25–32, 1:37–49, 2:6–10; 2:54–57, 3:7–14, 3:57–4:6,

5:25–33. In Thayer, Figure 3 plots these same values (*i.e.*, illumination intensity versus the ambient light intensity). The S-shaped curve in Figure 3 shows that, at low and high ambient intensities (circled in red below), the ambient light intensity (*i.e.*, the denominator in the contrast ratio) can change significantly relative to the illumination intensity (*i.e.*, the numerator in the contrast ratio). Ex. 1003, Fig. 3; Ex. 2002, ¶¶53–55. This will cause significant changes in the contrast ratio at high and low intensities (in red). *Id.*

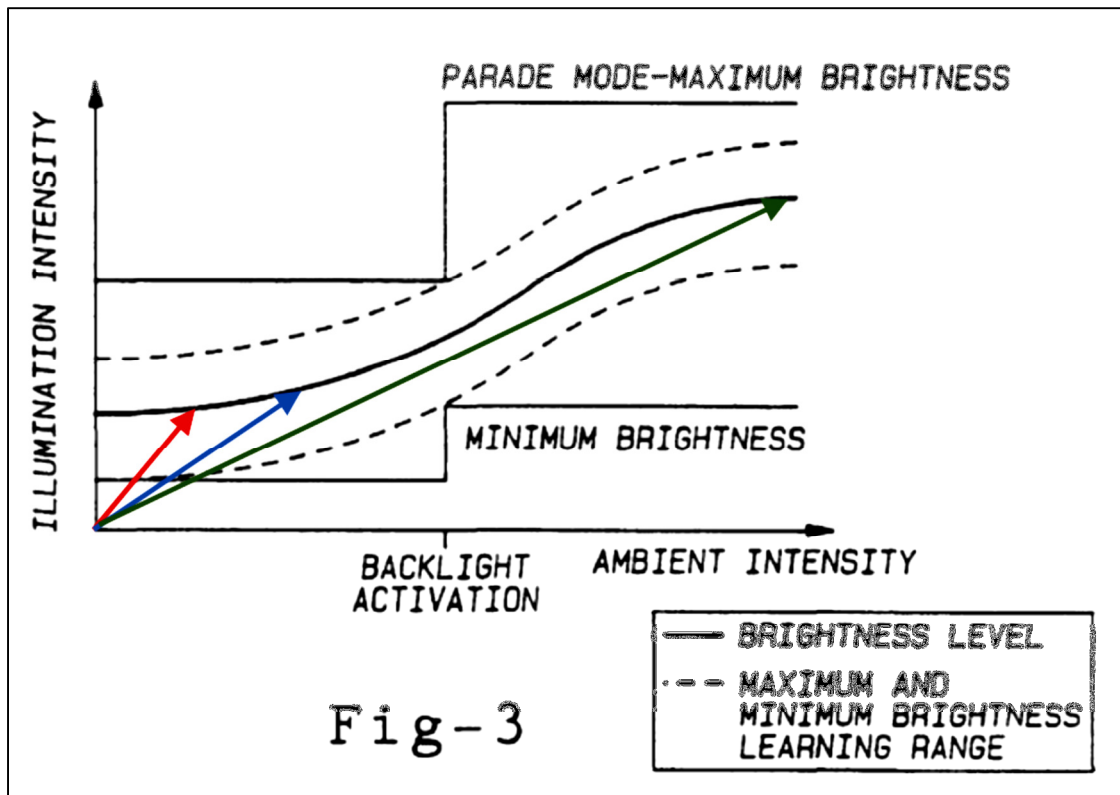


In the middle of the S-shaped curve (circled in blue above), the illumination intensity (*i.e.*, the numerator in the contrast ratio) changes significantly relative to

the ambient light intensity (*i.e.*, the denominator in the contrast ratio) thereby resulting in varying contrast ratios as ambient light intensity increases. *Id.*

The variable contrast ratios can also be discerned from looking at the slope of lines drawn from the origin to points on the S-shaped curve of Thayer. Ex. 2002, ¶56. If a line is drawn from the origin of Figure 3 of Thayer, the slope of that line will be the contrast ratio at that point. *Id.* The slope of a line is the vertical distance between the origin and the point on the S-shaped curve (*i.e.*, illumination intensity) divided by the horizontal distance between the origin and the point on the S-shaped curve (*i.e.*, ambient light intensity). *Id.* at ¶57.

Figure 3 below shows three lines drawn from the origin to three different points on the S-shaped curve. The slope of each line is different indicating that the contrast ratios are different at those different points. *Id.* at ¶¶58-59.



Therefore, a POSA would not have been motivated to combine Thayer and Godwin as Thayer's system, which is designed to have an S-shaped curve with varying contrast ratios, is fundamentally incompatible with the purpose of Godwin's algorithm, which is to keep a constant contrast ratio. A POSA could not combine Thayer and Godwin without contradicting the basic principles under which Thayer and Godwin were designed to operate. *Plas-Pak Indus., Inc. v Sulzer Mixpac AG*, 600 F. App'x. 755, 758 (Fed. Cir. 2015) ("However, combinations that change the 'basic principles under which the [prior art] was designed to operate,' *In re Ratti*, 270 F.2d 810, 813 (C.C.P.A. 1959), or that render

the prior art ‘inoperable for its intended purpose,’ *In re Gordon*, 733 F.2d 900, 902 (Fed. Cir. 1984), may fail to support a conclusion of obviousness.”).

Third, a POSA would not have been motivated to combine the “minimum brightness” level in Thayer with Godwin’s algorithm as it would contradict the basic principles of Thayer. Godwin teaches away from employing the “minimum brightness” level in Thayer. Thayer allows for 20% to more than 50% of all user brightness settings (*i.e.*, any setting outside of the learning range) to automatically result in either the minimum or maximum brightness level regardless of ambient light level. Ex. 1003, Fig. 4 (*see steps 50, 58, 64*), 5:10–34, 6:31–35; Ex. 2002, ¶¶60. Thayer’s minimum brightness level thus excludes having a constant contrast ratio over the operable range of ambient light levels as is the stated goal of Godwin. Ex. 1004 at Abstract, 2:6–10, 5:25–33; Ex. 2002, ¶¶60. Thus, the minimum brightness level in Thayer is fundamentally incompatible with Godwin, which provides a constant contrast ratio over a range of user inputs and ambient light intensities. *Id.* Accordingly, a POSA would not have been motivated to combine Thayer and Godwin as such a combination is contrary to the basic principles under which they were designed to operate. *Plas-Pak Indus.*, 600 F. App’x. at 758.

Fourth, a POSA would not have been motivated to combine Thayer and Godwin as the combination would eliminate Thayer’s principle purpose, which is to provide an adaptive process that learns and remembers the preferences of the

operator. In response to an operator changing the brightness, Thayer will periodically modify the brightness values in its look-up table containing display brightness values corresponding to ambient light levels. Ex. 1003, 6:41–7:17; Ex. 2002, ¶61. This learning process comprises: a) retrieving the value for display brightness at the current ambient light level from the look-up table; b) adding a percentage of the brightness change requested by the vehicle operator to the retrieved brightness value; and c) replacing the old brightness value in the look-up table with the new value. *Id.* at Fig. 4, 4:12–42, 6:16–30, 6:41–7:14; Ex. 2002, ¶61. As the operator continues to provide input over time, the brightness values in the look-up table for each ambient light level will approach the preferred brightness values for the vehicle operator. *Id.*

Godwin, however, multiplies the value from a look-up table associated with the current ambient light intensity by the value from a different look-up table associated with the current user setting of the contrast ratio to obtain an output intensity. Ex. 1004, Fig. 3, 4:34–57; Ex. 2002, ¶62. Each time, Godwin starts from scratch to calculate the output intensity of the image and does not use previous calculations. *Id.* Therefore, Godwin does not “learn” and is not adaptive like Thayer. Godwin does not have the ability to store values from prior display brightness calculations in its look-up tables because they are stored in read-only memory. *Id.* This prevents Godwin from being adaptive and learning the

preferences of a user as Thayer does. Ex. 2002, ¶62. A POSA would thus have not combined Thayer and Godwin as such a combination would eliminate the manner of operation, and the purpose, of Thayer, which is to be a learning, adaptive system.

Thayer uses *addition* to change values stored in its look-up tables based on user brightness control settings. Ex. 1003, Fig. 4, 6:41–7:14; Ex. 2002, ¶63. Addition is thus a fundamental part of the learning process taught by Thayer. Ex. 2002, ¶63. If Godwin’s algorithm, which uses multiplication and does not store calculated values, were substituted for Thayer’s algorithm, then the adaptive, learning feature of Thayer, which is its main purpose, would be destroyed as the new values based on user adjustments would not be stored and thus not learned by the system. *Id.* A POSA would not have combined Godwin with Thayer as such a combination would violate the purpose and the principles of operation of Thayer by eliminating the adaptive, learning feature that is at the heart of Thayer. *Plas-Pak Indus.*, 600 F. App’x. at 758.

VIII. GROUND I: THE COMBINATION OF THAYER AND GODWIN FAILS TO DISCLOSE THE LIMITATIONS OF THE INDEPENDENT CLAIMS 1, 15, AND 19

A. 1[a]: “a first input configured to receive a user signal indicative of a user selectable brightness setting;”

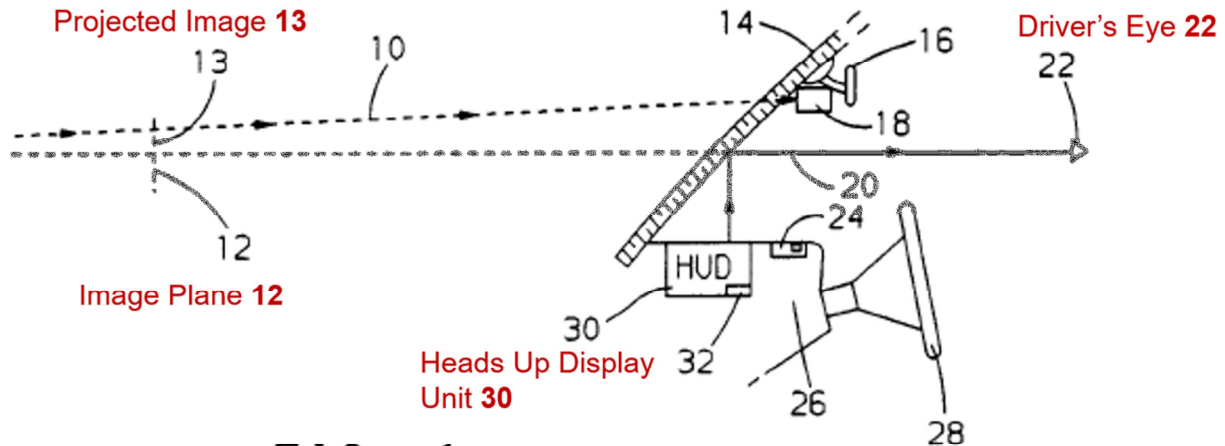
15[a]: “receiving a user input signal indicative of a user selectable brightness setting;”

19[a]: “means for receiving an input signal indicative of a user selectable brightness setting;”

Petitioner cites to *both* Thayer and Godwin as allegedly disclosing these limitations without any explanation of which reference it is relying on for this element or, if relying on both references, how the disclosures of Thayer and Godwin can be combined into a single operable system. Petition at 35–37. This failure to identify the differences between the claims and the prior art is reason for denying institution. *Travelocity.com*, CBM2014-00082, Paper 10 at 19–21; *Apple*, CBM2015-00016, Paper 23 at 24–25; *John Crane*, IPR2016-01786, Paper 7 at 11–14. Further, Petitioner’s failure to explain *how* the references would be combined and how that combination would operate is another basis for denying institution. *Personal Web*, 848 F.3d at 994 (“[A] clear, evidence-supported account of the contemplated workings of the combination is a prerequisite to adequately explaining and supporting a conclusion that a relevant skilled artisan would have been motivated to make the combination and reasonably expect success in doing so.”); *Huawei*, IPR2018-00246, Paper 8 at 20–21 (denying institution for failure to sufficiently explain how references would be combined.).

Godwin does *not* disclose an “input” or “input signal” that is “indicative of a user selectable brightness setting.” Petitioner identifies “the contrast adjuster 24” for inputting a desired *contrast ratio*. Petition at 36–37. Godwin defines “contrast ratio” as the image intensity divided by the background illumination, which is “the

ambient light intensity of the scenery in front of the vehicle at the position at which the head-up display image is viewed [*i.e.*, at image plane 12].” Ex. 1004, 1:25–32; Ex. 2002, ¶45.



Id. at Fig. 1 (emphasis added).

By Godwin’s own definition, “contrast ratio” is not indicative of a “user selectable brightness setting.” Ex. 2002, ¶47. For example, when the image intensity (*i.e.*, brightness) is 6 and the background illumination is 3, the contrast ratio is 2. *Id.* When the image intensity is 8 and the background illumination is 4, the contrast ratio is 2. *Id.* When the image intensity is 4 and the background illumination is 2, the contrast ratio is 2. *Id.* The “contrast ratio” can thus be exactly the same at a variety of different brightness settings. Therefore, the “contrast ratio” is not indicative of brightness. *Id.*

Similarly, the exact same image intensity can result in numerous different contrast ratios. Ex. 2002, ¶48. For example, when the image intensity is 8 and the background illumination is 2, the contrast ratio is 4. *Id.* When the image intensity is 8 and the background illumination is 4, the contrast ratio is 2. *Id.* When the image intensity is 8 and the background illumination is 1, the contrast ratio is 8. *Id.* The contrast ratio is thus not indicative of brightness. *Id.* Therefore, Godwin does not disclose an “input” or “input signal” that is “indicative of a user selectable brightness setting.” *Id.*

Further, “contrast ratio” is not mentioned in the text of the ’117 patent. The file history further supports that “brightness” and “contrast” are two different things. The examiner of the parent patent to the ’117 patent repeatedly asserted that “contrast” and “brightness” are independent variables that can be controlled independently. Ex. 1028 at 152 (“...because this would ***adjust independently the contrast and brightness without one effecting the other.***”). Therefore, the specification and the file history are clear that “contrast ratio” is not an “input” or “input signal” that is “indicative of a user selectable brightness setting.”

Petitioner misleadingly cites to an Appendix attached to the provisional application in the ’117 patent’s priority chain to argue that contrast ratio is the same as brightness. Petition at 37. Petitioner is incorrect. ***First***, Petitioner ignores the body of the provisional itself (not the Appendix), which discusses

embodiments with a “user selectable *brightness* control” or “dimming” input. Ex. 1022 at 2–4. These are the embodiments that are claimed. **Second**, the portion of the provisional cited relates to “pixel contrast ratio,” which is different than the “contrast ratio” in Godwin (*i.e.*, image intensity divided by the background illumination). Godwin has no pixels (and thus no pixel contrast ratio) as Godwin relates to a projected image. Ex. 1004, Abstract, 2:48–54. The discussion of pixel contrast ratio is irrelevant to the disclosure of Godwin. **Third**, the provisional never states that the pixel contrast ratio is “indicative of a user selectable brightness setting.” Ex. 1022.

Petitioner states that “a POSA would have been motivated to use Godwin’s multiplication algorithm to calculate display brightness values in Thayer’s system.” Petition at 32. Petitioner improperly provides *no* explanation of how Godwin’s algorithm would be incorporated into Thayer’s system to create a working device, which is a “prerequisite to adequately explaining and supporting a conclusion” that a POSA would have been motivated to combine references. *Personal Web*, 848 F.3d at 994. For example, Thayer’s alleged user “input” (*i.e.*, “an instrument display brightness control switch 38”) would not work in Godwin’s algorithm, which requires a contrast ratio as an input. Ex. 1004, Fig. 3, 4:60–65. Petitioner’s failure to explain how the combination would work requires denying institution. *Personal Web*, 848 F.3d at 994; *Huawei*, IPR2018-00246, Paper 8 at 20–21

(denying institution for failure to sufficiently explain how references would be combined.); *Shopkick*, IPR2015-00279, Paper 7 at 29 (“The Board must resolve all vagueness and ambiguity in Petitioner’s arguments against the Petitioner.”).

B. 1[b]: “a light sensor configured to sense ambient light and to output a sensing signal indicative of the ambient light level;”

15[c]: “wherein the sense signal indicates an ambient light level;”

19[b]: “means for sensing ambient light to generate a sense signal indicative of the ambient light level;”

Petitioner again cites to *both* Thayer and Godwin as allegedly disclosing these limitations. Petition at 37–38. Petitioner fails to state whether it is relying on Thayer, Godwin, or some unexplained combination of both references. *Id.* Petitioner’s failure to identify *how* Thayer and Godwin are being combined and the differences between the claims and each reference prevents a meaningful obviousness analysis and requires denying institution. *Personal Web*, 848 F.3d at 994; *Travelocity.com*, CBM2014-00082, Paper 10 at 19–21 (denying institution for failure to identify differences between challenged claims and asserted prior art for obviousness); *Huawei*, IPR2018-00246, Paper 8 at 20–21 (denying institution for failure to explain how references would be combined.).

The identified sensors in Thayer and Godwin are measuring different values. Because Godwin involves projecting an image, the sensor in Godwin measures the ambient light at the image plane *outside* of the automobile. Ex. 1004, Fig. 1,

Abstract, 2:41–44, 3:25–27, 6:7–12, 8:7–9. In Thayer, the sensor is measuring the ambient light *inside* the automobile’s passenger compartment. Ex. 1003, 3:60–63. Petitioner provides no rationale for combining these sensors into a single device or for choosing one sensor over the other. Petition at 37–38. Institution should thus be denied. *Personal Web*, 848 F.3d at 994 (“[A] clear, evidence-supported account of the contemplated workings of the combination is a prerequisite to adequately explaining and supporting a conclusion that a relevant skilled artisan would have been motivated to make the combination and reasonably expect success in doing so.”); *Huawei*, IPR2018-00246, Paper 8 at 20–21 (denying institution for failure to explain how references would be combined.); *Shopkick*, IPR2015-00279, Paper 7 at 29 (“The Board must resolve all vagueness and ambiguity in Petitioner’s arguments against the Petitioner.”).

C. 1[c]: “a multiplier configured to selectively generate a combined signal based on both the user signal and the sensing signal;”

15[b]: “selectively multiplying the input signal with a sense signal to generate a combined signal;”

19[c]: “means for multiplying the input signal with the sense signal to generate a combined signal;”

Limitations 1[c], 15[b], and 19[c] are herein referred to collectively as the “multiplying limitations.” There is no dispute between the parties that the “multiplying limitations” require multiplication to be performed. Ex. 2006 (CC Brief) at 4; Ex. 2005, Ex. A at 1, 4. The proper construction is shown below.

Claim Term	Patent Owner Construction
“a multiplier configured to selectively generate a combined signal based on both the user signal and the sensing signal” (Claim 1)	“a multiplier configured to generate on a selective basis a combined signal based on both the user signal and the sensing signal”
“selectively multiplying the input signal with a sense signal to generate a combined signal” (Claim 15)	“multiplying on a selective basis the input signal with a sense signal to generate a combined signal”
“means for multiplying the input signal with the sense signal to generate a combined signal” (Claim 19)	Function: multiplying the input signal with the sense signal to generate a combined signal Structure: (1) a pair of current steering diodes and a network of resistors or (2) a digital-to-analog converter or (3) a pair of current-steering diodes having commonly connected anodes coupled to the sensing signal and respective cathodes coupled to the user signal and a network of resistors or (4) an isolation diode having an anode coupled to the sensing signal and a cathode coupled to the user adjustable potentiometer and a network of resistors

The combination of Thayer and Godwin does not render obvious any claim of the '117 patent under either Polaris's construction or Petitioner's construction.

1. Petition Fails to Disclose Differences between Claims and Each of Thayer and Godwin

Petitioner again cites to *both* Thayer and Godwin as allegedly disclosing the “multiplying limitations” of claims 1, 15, and 19. Petition at 38–42. Petitioner fails to state whether it is relying on Thayer, Godwin, or some unexplained

combination of both references. *Id.* Petitioner’s failure to identify how Thayer and Godwin are being combined and the differences between the claims and each reference prevents a meaningful obviousness analysis requiring denial of institution. *Personal Web*, 848 F.3d at 994; *Travelocity.com*, CBM2014-00082, Paper 10 at 19–21 (denying institution for failure to identify differences between challenged claims and asserted prior art for obviousness); *Apple*, CBM2015-00016, Paper 23 at 24–25 (denying petition as to obviousness grounds where petitioner failed to state “what specific teaching is lacking in [the prior art reference] (i.e., the differences between the claimed subject matter and [the prior art reference]).”); *John Crane*, IPR2016-01786, Paper 7 at 11–14 (denying petition for failure to identify differences between challenged claims and asserted prior art for obviousness grounds); *Huawei*, IPR2018-00246, Paper 8 at 20–21 (denying institution for failure to explain how references would be combined).

2. Thayer and Godwin Do Not Disclose the “Multiplying Limitations” in Claims 1, 15, and 19

The combination of Thayer and Godwin does not disclose the “multiplying limitations.” As Petitioner admits, Thayer does not disclose multiplying a user input signal and a sense signal indicative of the ambient light level as required by the “multiplying limitations.” Petition at 40 (“Thayer does not expressly disclose mathematically multiplying.”). Rather, Thayer discloses *adding* a percentage of

the delta between a new user setting and the existing value in a look-up table to obtain the display intensity.

If the switch 38 has not been adjusted by the vehicle operator 36, the system 26 will get the appropriate illumination value from the look-up table 32 at the present ambient light intensity as represented by box 52. Once the system 26 has gotten the appropriate look-up value, *the system 26 will add delta to this value to determine the appropriate instrumentation display intensity* as represented by box 54.

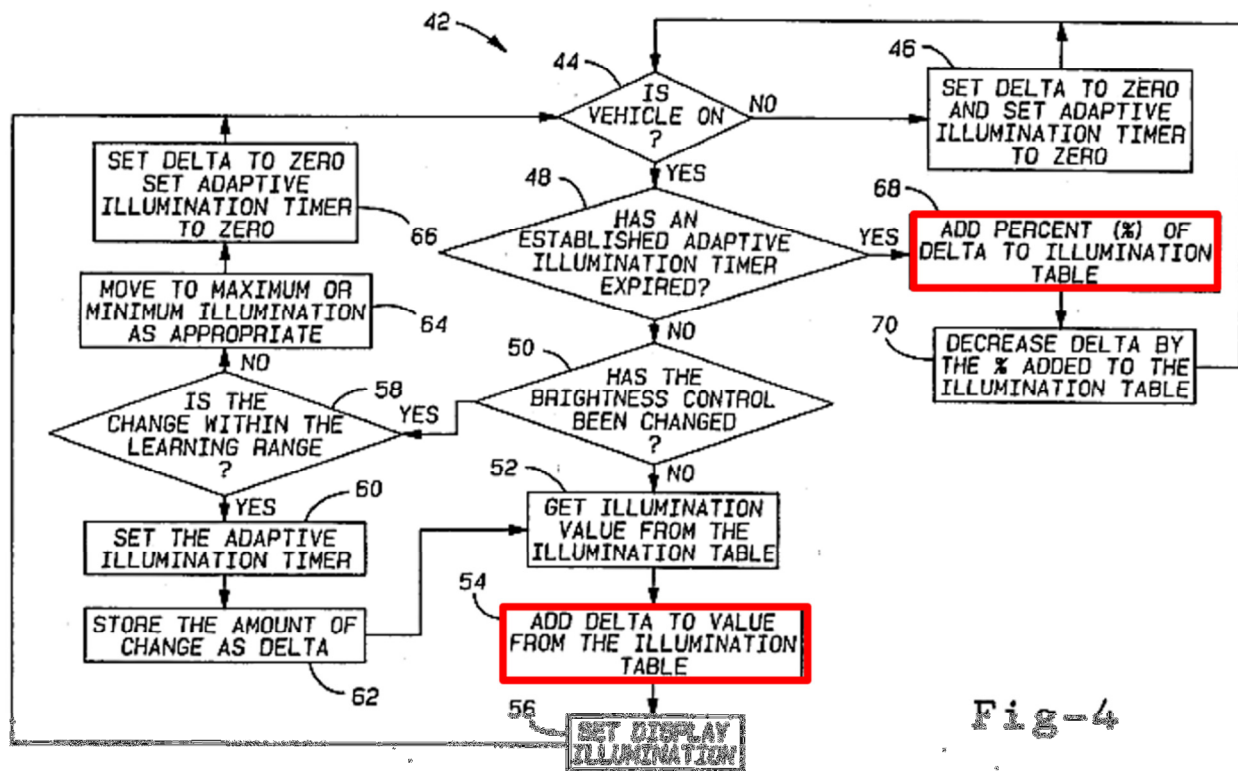


Fig-4

In one embodiment, this percentage is *25% of the difference between the original position of the switch 38 and the new position of the switch 38*. In this embodiment, *only a percentage of delta is added to the illumination look-up table* based on the premise that people generally overstate their desires, and thus, the vehicle operator 36

would more than likely have adjusted the brightness control more than what he really wanted to.

* * * *

Further, *a percentage of delta is added to the look-up table values* that are around the target look-up table value for the current ambient light intensity...After the *percent of delta is added to the illumination table*, the delta is decreased by this percent and the new delta is stored at box 70. Once the new delta is stored, the system 26 then determines if the vehicle is on at the box 44. *When the delta has been decreased by the percentage that is added to the look-up table, and the vehicle remains on, then this value is added to the illumination value at the box 54 to obtain the illumination setting*, as discussed above.

Ex. 1003, Fig. 4, 6:4–10, 6:53–60, 7:1–14 (emphasis added). Because Thayer’s algorithm uses addition not multiplication, Thayer does not disclose the “multiplying limitations.”

Godwin also does not disclose the “multiplying limitations.” Godwin’s algorithm is multiplying “contrast ratio” and “ambient intensity.” Ex. 1004, 4:50–56. Godwin does not disclose a “user signal” or “input signal” that is “indicative of a user selectable *brightness* setting” as required by claims 1, 15, and 19. As discussed above regarding limitation [a], the “contrast ratio” provides no indication of a “brightness setting.” The “contrast ratio” can be the same for different

brightness settings.² Similarly, the same image intensity can result in different “contrast ratios.”³ Therefore, Godwin’s algorithm, which uses a “contrast ratio,” is not “based on...the user signal” that is “indicative of a user selectable brightness setting” as required by claim 1 and does not perform the step of “multiplying the input signal with [a/the] sense signal” as required by claims 15 and 19.

3. Petitioner Fails to Identify Where Thayer and Godwin Disclose “Selectively Generate” in Claim 1 and “Selectively Multiplying” in Claim 15

Petitioner fails to identify where in Godwin and Thayer there is a disclosure of “selectively generate a combined signal” in claim 1 and “selectively multiplying the input signal with a sense signal to generate a combined signal” in claim 15. Petition at 38–42. Petitioner entirely ignores the “selectively” limitations of claims 1 and 15 in its Petition. Other than the section heading quoting the claim terms, “selectively” does not even appear in the Petition in relation to the “multiplying limitations” of claims 1 and 15. *Id.* Petitioner fails to demonstrate a reasonable likelihood of prevailing by failing to identify where the “selectively” limitations

² For example, when the image intensity is 6 and the background illumination is 3, the contrast ratio is 2. When the image intensity is 8 and the background illumination is 4, the contrast ratio is also 2.

³ For example, when the image intensity is 8 and the background illumination is 2, the contrast ratio is 4 in Godwin. When the image intensity is the same value of 8 but the background illumination is 4, the contrast ratio is 2.

are found in Thayer and Godwin for claims 1–18. 37 C.F.R. § 42.104(b)(4); *Naughty Dog, Inc. v. McRo, Inc.*, IPR2014-00197, Paper 11 at 17–18 (May 28, 2014) (denying petition where Petitioner failed to identify where limitations of challenged claims are found in the prior art); *Apple Inc. v. Evolutionary Intelligence, LLC*, IPR2014-00079, Paper 8 at 17–19 (April 25, 2014) (denying petition where Petitioner failed to identify where limitations of challenged claims are found in the prior art). Petitioner ignores these limitations because Godwin and Thayer do not disclose the limitations “selectively generate a combined signal” in claim 1 and “selectively multiplying the input signal with a sense signal to generate a combined signal” in claim 15.

4. Thayer and Godwin Do Not Disclose “Means for Multiplying” Under Either Petitioner’s or Patent Owner’s Construction

Thayer and Godwin do not disclose the “means for multiplying...” limitation of claim 19. Petitioner construed “means for multiplying the input signal with the sense signal” to have a corresponding structure of “a multiplier circuit.” Petition at 16. However, even under its own construction, Petitioner does not identify any disclosure of “a multiplier circuit” in either Thayer or Godwin, as to claims 19–20. *Id.* at 38–42; *see* 37 C.F.R. § 42.104(b)(4); *Naughty Dog*, IPR2014-00197, Paper 11 at 17–18; *Apple*, IPR2014-00079, Paper 8 at 17–19.

As properly construed, the corresponding structures include “(1) a pair of current steering diodes and a network of resistors or (2) a digital-to-analog

converter or (3) a pair of current-steering diodes having commonly connected anodes coupled to the sensing signal and respective cathodes coupled to the user signal and a network of resistors or (4) an isolation diode having an anode coupled to the sensing signal and a cathode coupled to the user adjustable potentiometer and a network of resistors.” Petitioner does not identify any of these structures in Thayer or Godwin. Petition at 39–42. Moreover, Thayer and Godwin do not disclose any corresponding structure, and Petitioner fails to demonstrate a reasonable likelihood of prevailing as to claims 19–20.

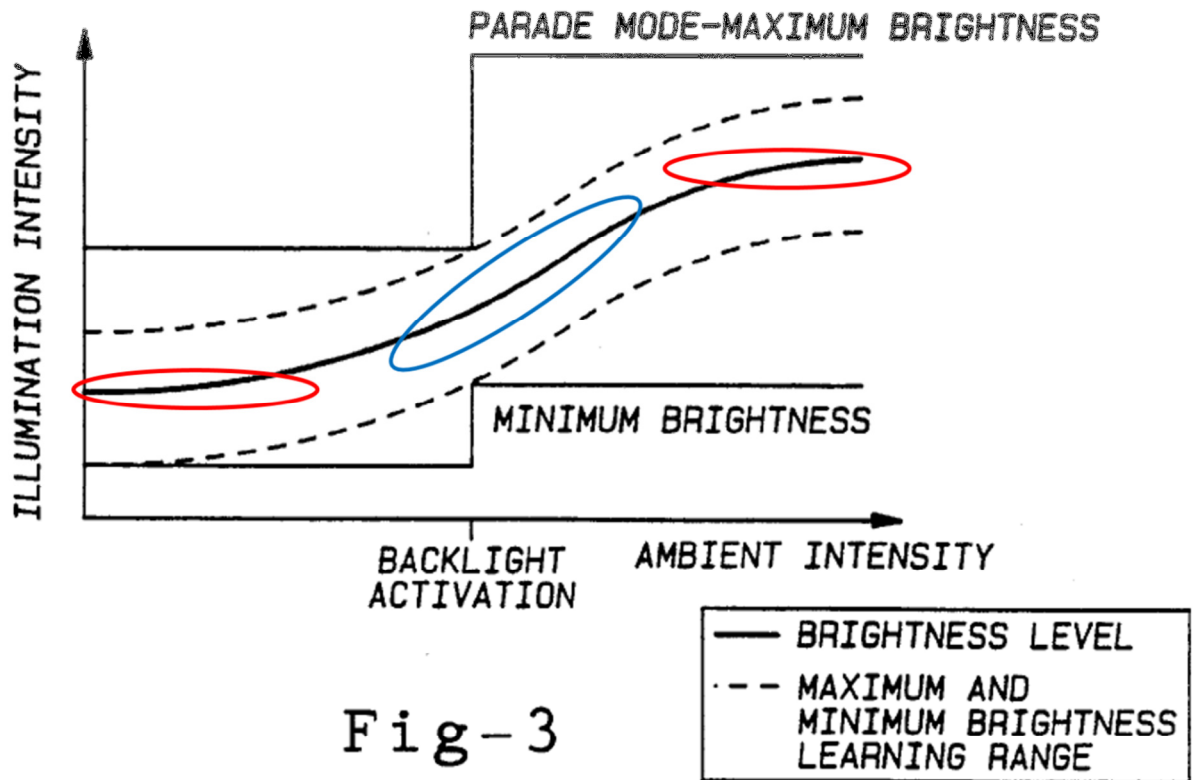
5. A POSA Would Not Be Motivated to Combine Thayer and Godwin Because They Operate Differently

A POSA would *not* combine Thayer and Godwin because they have different goals and principles of operation and are thus incompatible. After admitting that “Thayer does not expressly disclose mathematically multiplying,” Petitioner argues that a POSA would have made a “simple substitution” of Godwin’s algorithm for Thayer’s algorithm. Petition at 40–41. Such a conclusory statement is incorrect and unsupported by evidence in the record.

A POSA would not have combined Thayer with Godwin because these references have fundamentally different goals and operate in a different manner. Godwin’s goal is to provide an image at a “constant contrast ratio” wherein “contrast ratio” is defined as the *brightness of the projected image* divided by the background illumination (*i.e., ambient light level at the image plane*). Ex. 1004,

Abstract, 1:25–32, 1:37–49, 2:6–10; 2:54–57, 3:7–14, 3:57–4:6, 5:25–33. Godwin’s algorithm can multiply a “contrast ratio” by an “ambient intensity” value resulting in a **linear** change in the output intensity versus ambient light such that the rate of change in the intensity is **identical** across the operable range of ambient light levels. *Id.* at 4:50–5:18; Ex. 2002, ¶52. This maintains a constant contrast ratio.

Thayer, however, has a pre-programmed **S-shaped curve** (*i.e.*, **not linear**) that can be shifted up or down by the user adjusting the brightness setting for the display. Ex. 1003, Figs. 3, 5; 2:53–56, 5:1–4, 7:18–27; Ex. 2002, ¶51. This pre-programmed S-shaped curve ensures that the rate of change in brightness is **different** at different ambient light levels as shown below in the blue and red regions resulting in varying contrast ratios at different ambient light levels. *Id.*



Ex. 1003, Fig. 3 (emphasis added).

The S-shaped curve in Figure 3 plots the illumination intensity (*i.e.*, the numerator in the contrast ratio of Godwin) versus the ambient light intensity (*i.e.*, the denominator in the contrast ratio of Godwin). The S-shaped curve in Figure 3 shows that, at low and high ambient intensities (circled in red above), the ambient light intensity can change significantly relative to the illumination intensity. Ex. 2002, ¶¶53–55. This results in variation in the contrast ratios at low and high ambient intensities. *Id.*

In the middle of the S-shaped curve (circled in blue above), the illumination intensity (*i.e.*, the numerator in the contrast ratio) changes significantly relative to

the ambient light intensity (*i.e.*, the denominator in the contrast ratio) resulting in a varying contrast ratio at different ambient light intensities. *Id.* Therefore, in Thayer, the system is designed to a varying contrast ratio as the ambient light intensity changes. *Id.*

Godwin's goal of keeping a constant contrast ratio is thus fundamentally incompatible with Thayer, which is designed to have an S-shaped curve with varying contrast ratios as shown in Figure 3. A POSA would not have been motivated to combine Thayer and Godwin as Thayer's system (*i.e.*, an S-shaped curve with varying contrast ratios) is mutually exclusive of Godwin's goal of maintaining a constant contrast ratio. Further, a POSA could not combine Thayer and Godwin without contradicting the basic principles under which Thayer and Godwin operate. *Plas-Pak*, 600 F. App'x at 758 ("However, combinations that change the 'basic principles under which the [prior art] was designed to operate,' *In re Ratti*, 46 CCPA 976, 270 F.2d 810, 813 (1959), or that render the prior art 'inoperable for its intended purpose,' *In re Gordon*, 733 F.2d 900, 902 (Fed. Cir. 1984), may fail to support a conclusion of obviousness."). Institution should thus be denied.

6. Petition Fails to Explain How Thayer Would Be Combined with Godwin

Petitioner never explains *how* the Godwin algorithm can be incorporated into Thayer's system to make an operable device. Given the incompatibility of the

references and the fact that they teach away from each other, it is not clear *how*, if at all, Thayer and Godwin would be combined. For example, Petitioner identifies both the “adjusted look-up table value” in Thayer and the “output intensity signal” in Godwin as a “combined signal” in claims 1, 15, and 19. Petition at 40–41. It is unclear which “combined signal” Petitioner is relying on. Alternatively, if relying on both “combined signals,” it is unclear how such a system would operate with two “combined signals.”

Further, are both algorithms included in the new combination? If so, how would that work since Godwin’s algorithm maintains a constant contrast ratio and Thayer’s algorithm results in varying contrast ratios at different ambient light levels? What is the user input into the algorithm? Is it the contrast ratio of Godwin or the brightness control of Thayer? If the user input is the brightness setting of Thayer, how does that fit into the algorithm of Godwin, which uses a contrast ratio not brightness? How would Thayer’s algorithm, with its adaptive timer, work with the algorithm of Godwin?

The Petitioner provides no explanation of how these different features of Godwin and Thayer would be combined to yield an operable device. Petitioner has not actually set forth a workable combination for purposes of obviousness. Institution should thus be denied. *Personal Web*, 848 F.3d at 994 (“[A] clear, evidence-supported account of the contemplated workings of the combination is a

prerequisite to adequately explaining and supporting a conclusion that a relevant skilled artisan would have been motivated to make the combination and reasonably expect success in doing so.”); *Huawei*, IPR2018-00246, Paper 8 at 20–21 (denying institution for failure to sufficiently explain how references would be combined).

D. 1[d]: “a dark level bias configured to adjust the combined signal to generate a brightness control signal that is used to control a brightness level of a visible display such that the brightness control signal is maintained above a predetermined level when the ambient light level decreases to approximately zero;”

15[d]: “adjusting the combined signal with a dark level bias to generate a brightness control signal for controlling brightness of a visible display such that the brightness control signal is maintained above a predetermined level when the ambient light level decreases to approximately zero;”

19[d]: “means for adjusting the combined signal with a dark level bias to generate a brightness control signal that is maintained above a minimum level when the ambient light level decreases to approximately zero;”

1. Petitioner Fails to Address Half of the Limitations

Thayer and Godwin do not disclose “adjust[ing] the combined signal to generate a brightness control signal” with a “dark level bias.” Accordingly, Petitioner chose to entirely ignore and not address the limitations “a dark level bias configured to adjust the combined signal to generate a brightness control signal” in claim 1 and “adjusting the combined signal with a dark level bias to generate a brightness control signal” in claims 15 and 19.

Rather, Petitioner's entire analysis is focused on the portion of the phrase that reads "above a predetermined level when the ambient light level decreases to approximately zero." Petition at 42–46. Petitioner's analysis is narrowly focused on whether there is a minimum brightness level when the ambient light is approximately zero while entirely ignoring the language "a dark level bias configured to adjust the combined signal to generate a brightness control signal" in claim 1 and "adjusting the combined signal with a dark level bias to generate a brightness control signal" in claims 15 and 19.

2. "Adjust[ing] the Combined Signal" Is Not Disclosed in Thayer or Godwin

Neither Thayer nor Godwin disclose the "adjust the combined signal" limitation in claim 1 or the "adjusting the combined signal" limitation in claims 15 and 19. Petitioner relies on Thayer as allegedly disclosing these limitations. With respect to the "multiplying limitations," Petitioner states "[t]he adjusted look-up table value corresponds to the claimed 'combined signal'" in Thayer. Petition at 40. However, Petitioner provides no explanation of how the alleged "combined signal" in Thayer (*i.e.*, "adjusted look-up table value") is adjusted by a dark level bias "to generate a brightness control signal" as required by claims 1, 15, and 19. Petition at 42–46. In fact, the "adjusted look-up table value" in Thayer is not even mentioned in the analysis of the "dark level bias" limitations (*i.e.*, limitation [d] in

claims 1, 15, and 19). *Id.* Petitioner provides *no citations* to Thayer showing “adjust[ing] the combined signal.”

Petitioner does not appear to rely on Godwin for the “dark level bias” limitations. Petitioner similarly provides no citations to Godwin for the “adjust[ing] the combined signal” limitations and no description of how the alleged “combined signal” in Godwin (*i.e.*, “output intensity signal”) is adjusted by a dark level bias “to generate a brightness control signal.” Petition at 41, 42–46.

Therefore, because Petitioner does not identify any disclosure of “adjust[ing] the combined signal” in either Thayer or Godwin, Petitioner indisputably failed to meet its burden to “specify where each element of the claim is found in the prior art patents or printed publications relied upon.” 37 C.F.R. § 42.104(b)(4); *Naughty Dog*, IPR2014-00197, Paper 11 at 17–18; *Apple*, IPR2014-00079, Paper 8 at 17–19.

3. “Brightness Control Signal” Is Not Disclosed in Thayer or Godwin

Neither Thayer nor Godwin disclose the claimed “brightness control signal.” Accordingly, Petitioner does not identify a “brightness control signal” in either Thayer or Godwin. Petition at 42–46. Petitioner provided *no citations* in the Petition to either Thayer or Godwin as allegedly disclosing a “brightness control signal.” *Id.* Petitioner completely fails to address this key limitation in the Petition. *Id.*

While Petitioner alleges that the “adjusted look-up table value” in Thayer and the “output intensity signal” in Godwin are the “combined signal,” these cannot be the “brightness control signal” as the claim language is clear that these two signals are separate elements. *HTC Corp. v. Cellular Comm. Equip. LLC*, 701 F. App’x 978, 982 (Fed. Cir. 2017) (“The separate naming of two structures in the claim strongly implies that the named entities are not one and the same structure.”); *Becton Dickinson & Co. v. Tyco Healthcare Grp., LP*, 616 F.3d 1249, 1254 (Fed. Cir. 2010) (“Where a claim lists elements separately, ‘the clear implication of the claim language’ is that those elements are ‘distinct component[s]’ of the patented invention.”). Furthermore, the “combined signal” and “brightness control signal” need to be two separate elements because the claim language requires that the “combined signal” is adjusted by the dark level bias to generate a *new* “brightness control signal.” Ex. 1001, 12:27–43, 14:4–9, 14:29–32.

Because Petitioner fails to identify any disclosure of a “brightness control signal” in either Thayer or Godwin, Petitioner indisputably failed to “specify where each element of the claim is found in the prior art patents or printed publications relied upon.” 37 C.F.R. § 42.104(b)(4); *Naughty Dog*, IPR2014-00197, Paper 11 at 17–18; *Apple*, IPR2014-00079, Paper 8 at 17–19.

4. “Dark Level Bias” Is Not Disclosed in Thayer or Godwin

Neither Thayer nor Godwin disclose a “dark level bias.” In fact, Petitioner does not address the “dark level bias” portion of limitation [d] in claims 1, 15, and 19 in the Petition. Both parties agree that a “dark level bias” is a “value.” Ex. 2005, Ex. A at 7, 10. However, Petitioner does not identify any disclosure of a “dark level bias” in either Thayer or Godwin. Petition at 42–46. Petitioner therefore failed to meet its burden to “specify where each element of the claim is found in the prior art patents or printed publications relied upon.” 37 C.F.R. § 42.104(b)(4); *Naughty Dog*, IPR2014-00197, Paper 11 at 17–18; *Apple*, IPR2014-00079, Paper 8 at 17–19.

The “minimum brightness” level in Thayer that is referenced by Petitioner cannot be a “dark level bias.” Petition at 43–45. **First**, the “minimum brightness” level in Thayer does not adjust the alleged “combined signal” (*i.e.*, “adjusted look-up table value”) as the “adjusted look-up table value” is the final illumination intensity. Ex. 1003, Fig. 4. **Second**, there is no “combined signal” when the “minimum brightness” level is used. In Thayer, the display is set to the “minimum brightness” when the user moves the brightness control switch outside of the “learning range” (*e.g.*, bottom 10% of brightness range). As shown below, the system in Thayer checks whether the user has adjusted the brightness at step 50 (shown in blue). If the system determines that the user has adjusted the brightness

control switch 38 outside of the learning range (*e.g.*, to the bottom 10% of range) in step 58 (shown in yellow), then the system will automatically move to the minimum brightness level in step 64 (shown in green) without ever taking into account the ambient light level and without ever creating the alleged “combined signal.”

If the system 26 determines that the illumination timer has not expired, the system 26 will then *periodically determine if the operator 36 has adjusted the brightness control switch 38 as indicated by box 50.*

* * * *

If the system 26 determines that the brightness control has been changed at the box 50, the system 26 will then determine if this change is within the system learning range, as discussed above, as represented by box 58...If the change in the instrument intensity is *outside of the learning range* at the box 58, the system 26 will then *move the instrument display intensity to either the maximum or minimum intensity value depending on which way the operator 36 adjusted the switch 38 as represented by box 64.*

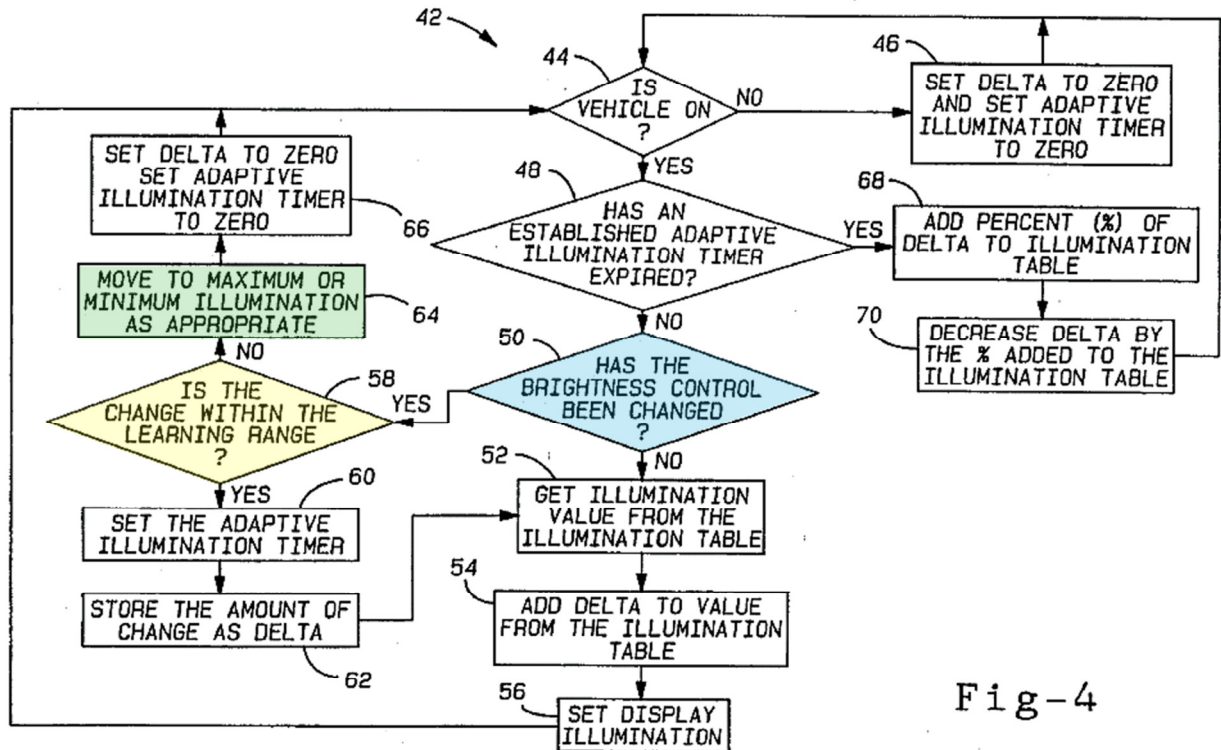


Fig-4

Ex. 1003, Fig. 4, 5:67–6:4, 6:16–35 (emphasis added). When the “minimum brightness” level in Thayer is used, no “combined signal” is generated as minimum brightness is set based on the magnitude of the user input being outside the learning range. *Id.* Therefore, the “minimum brightness” level in Thayer does not perform the action of “adjust[ing] of a combined signal” with a “dark level bias” as required by claims 1, 15, and 19.

5. “Means For Adjusting” Is Not Disclosed in Thayer or Godwin

Petitioner construed “means for adjusting” to have a corresponding structure of “a dark level bias circuit.” Petition at 18. However, Petitioner indisputably does not identify any disclosure of a “dark level bias circuit” in either Thayer or Godwin. *Id.* at 42–46. Therefore, even under its own construction, Petitioner

failed to meet its burden for claims 19–20 to “specify where each element of the claim is found in the prior art patents or printed publications relied upon.” 37 C.F.R. § 42.104(b)(4); *Naughty Dog*, IPR2014-00197, Paper 11 at 17–18; *Apple*, IPR2014-00079, Paper 8 at 17–19.

6. Petitioner’s Arguments Regarding Obviousness Lack Merit

Petitioner argues that “a POSA would have recognized that these limitations would have been obvious in view of the combination of Thayer and Godwin.” Petition at 45. Petitioner’s rationale does not make sense in light of the disclosures of Godwin and Thayer. *First*, as discussed above, neither Thayer nor Godwin have any disclosure of a “dark level bias,” “adjust[ing] the combined signal,” or “a brightness control signal.” Therefore, the combination of Thayer and Godwin would not yield a combination practicing any of these limitations.

Second, Petitioner argues that “a well-known solution was maintaining screen brightness above a minimum level.” Petition at 45. While this is improper hindsight, it is also completely irrelevant to the issue of obviousness. Claims 1, 15, and 19 do *not* claim “maintaining screen brightness above a minimum level.” Rather, the claims require using a “dark level bias” for “adjust[ing] the combined signal to generate a brightness control signal.” Petitioner presents no argument or evidence that using a “dark level bias” for “adjust[ing] the combined signal to generate a brightness control signal” was known in the art.

Third, Petitioner’s reliance on Ottenstein as an additional reference in the obviousness combination should be rejected as it is not a stated ground in the Petition. Regardless, Ottenstein was considered by the Examiner and cited in rejections of dependent claims 9 and 20 during prosecution of the ’117 patent. Ex. 1002 at 35, 67. The examiner never cited Ottenstein for any independent claim as he recognized that Ottenstein, like Godwin, does not disclose the “multiplying limitations” or the “dark level bias” limitations. *Id.*

Petitioner and its expert misrepresent Ottenstein’s disclosure. Ottenstein suggests that the “sensed ambient brightness level should be limited so that it is always at least 10% of full scale.” Ex. 1014 at 4:2–4. This simply states that the light sensor output has a minimum. It says absolutely nothing about the output of the system and certainly does not disclose a “dark level bias” or “adjust[ing] the combined signal to generate a brightness control signal.”

Fourth, Petitioner fails to state which “combined signal” (*i.e.*, the “adjusted look-up table value” in Thayer or the “output intensity signal” in Godwin) the “dark level bias” is “adjust[ing]” “to generate the brightness control signal.” Petitioner has thus failed to explain how Thayer and Godwin would be combined and how such a combination would operate to meet the limitations of claims 1, 15, and 19. Institution should thus be denied as to all claims. *Personal Web*, 848 F.3d at 994 (“[A] clear, evidence-supported account of the contemplated workings of

the combination is a prerequisite to adequately explaining and supporting a conclusion that a relevant skilled artisan would have been motivated to make the combination and reasonably expect success in doing so.”); *Huawei*, IPR2018-00246, Paper 8 at 20–21 (denying institution for failure to sufficiently explain how references would be combined.).

IX. CONCLUSION

The Petition is deficient for the reasons discussed above and, therefore, fails to demonstrate a reasonable likelihood that the Petitioner will prevail with respect to at least one claim. The Petition should thus be denied as to all challenged claims.

Dated: October 26, 2018

Respectfully submitted,

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WORD COUNT CERTIFICATION PURSUANT TO 37 C.F.R. § 42.24(d)

The undersigned hereby certifies, pursuant to 37 C.F.R. § 42.24(d), that the foregoing PATENT OWNER PRELIMINARY RESPONSE in IPR2018-01262 filed on this date contains no more than 14,000 words, and more specifically contains 13,934 words. The word count feature of the word processing program used to prepare this Response is relied upon in making this certification.

Respectfully submitted,

/Russell S. Tonkovich/
Russell S. Tonkovich

Dated: October 26, 2018

CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. §§42.6(e)(4) and 42.205(b), the undersigned certifies that on October 26, 2018 a complete and entire copy of this Patent Owner Preliminary Response was served on Lead and Backup Attorneys for Petitioner, via the consented to method of email to the following email addresses.

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Respectfully submitted,

Dated: October 26, 2018

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