

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ARNOLD & RICHTER CINE TECHNIK GMBH & CO. BETRIEBS KG,
Petitioner,

v.

ROTOLIGHT LIMITED,
Patent Owner.

IPR2022-00099
Patent 10,845,044 B2

Before MICHELLE N. ANKENBRAND, GRACE KARAFFA OBERMANN,
and AVELYN M. ROSS, *Administrative Patent Judges*.

ROSS, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314, 37 C.F.R. § 42.4

I. INTRODUCTION

Arnold & Richter Cine Technik GmbH & Co. Betriebs KG (“Petitioner”) filed a Petition (Paper 2, “Pet.”) requesting an *inter partes* review of claims 1–19 of U.S. Patent No. 10,845,044 B2 (Ex. 1001, “the ’044 patent”). Rotolight Limited (“Patent Owner”) filed a Preliminary Response to the Petition. Paper 8, “Prelim. Resp.” With authorization, Petitioner filed a Reply to Patent Owner’s Preliminary Response (Paper 10, “Reply”) and Patent Owner filed a Sur-reply (Paper 11, “Sur-reply”).

We have authority to determine whether to institute an *inter partes* review. 35 U.S.C. § 314 (2020); 37 C.F.R. § 42.4(a). The standard for instituting an *inter partes* review is set forth in 35 U.S.C. § 314(a), which provides that an *inter partes* review may not be instituted “unless the Director determines . . . there is a reasonable likelihood that the petitioner would prevail with respect to at least [one] of the claims challenged in the petition.”

For the reasons set forth below, and upon considering the Petition, Preliminary Response, Reply, Sur-reply, as well as arguments and evidence presented therein, we determine that Petitioner has established a reasonable likelihood of prevailing with respect to at least one challenged claim. Accordingly, we grant the Petition, and institute an *inter partes* review.

A. *Real Parties-in-Interest*

Petitioner states that “[t]he real party-in-interest in this proceeding is Arnold & Richter Cine Technik GmbH & Co. Betriebs KG.” Pet. 2. Patent Owner identifies Rotolight Limited and Rotolight Group Ltd. as a real parties-in-interest. Paper 4, 1 (Patent Owner’s Mandatory Notices).

B. Related Proceedings

The Parties identify the petitions for *inter partes* review challenging U.S. Patent Nos. 10,197,257 (IPR2021-01496), 10,197,258 (IPR2021-01497), and 10,203,101 (IPR2021-01498) as related matters. Pet. 2; Paper 4, 1–2.

C. The '044 Patent

The '044 patent, titled “Lighting System and Control Thereof,” issued on November 24, 2020. Ex. 1001, codes (45), (54). The '044 patent “relates to a lighting system, and the control of a lighting system, and the simulation of lighting special effects, and in particular to a lighting system for videography, broadcasting and cinematography.” *Id.* at 1:14–17.

According to the '044 patent, a typical “lighting controller called a ‘flicker box’ . . . is used to produce flickering lighting effects to mimic flickering light for example from a fire place, candle, electrical spark or lightning.” *Id.* at 1:18–23. But flicker boxes are “complex, costly and time consuming” to set up, and the “connection and control of multiple pieces of hardware . . . requir[e] a physical wired connection to the ‘hot’ light source desired to be controlled.” *Id.* at 1:27–32. Flicker boxes are also “incompatible with LED light sources” and “require the use of ‘hot’ incandescent light sources which are energy inefficient and also pose health and safety risks to those working on set.” *Id.* at 1:35–40.

The “improved solution” the '044 patent offers includes methods, controllers, and computer programs “for controlling a lighting device to produce user customizable lighting effect” by, among other things, “calculating a time varying lighting value based on at least one simulation parameter” and “outputting said time varying lighting value thereby to

simulate a lighting effect.” *Id.* at 1:45–58. Figure 2 is illustrative and reproduced below.

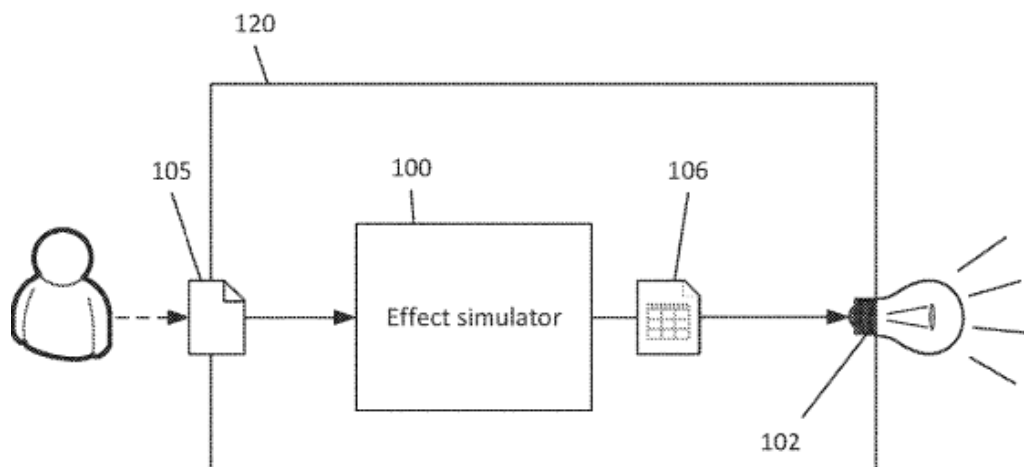


Figure 2

Figure 2 “is a schematic diagram of a further lighting system.” *Id.* at 5:22. Figure 2 shows studio lamp device 120 that includes input interface 105 and lighting effect simulator 100, which produces data 106 used to modulate light 102. *Id.* at 5:54–6:8. “In one example, the light **102** is an array of LEDs, preferably of differing colours” and a “microcontroller or other computing unit is integrated in the lamp device **120** for performing calculations.” *Id.* at 5:56–57, 5:61–63. The ’044 patent explains that “[t]his arrangement does not require the DMX [Digital Multiplex] distribution hub **302**, power elements **304**, **306**” required in a flicker box lighting system. *Id.* at 5:57–60.

Figure 6, reproduced below, illustrates a simulated lighting effect using an exemplary graphic user interface.

800

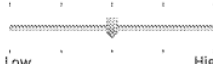
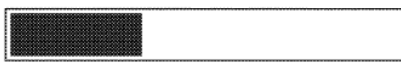
Light control system	
Fire effect	
Parameter	Setting
More info Fire activity	
More info Fire colour	2000K
More info Peak brightness	80%
More info Baseline brightness	40%
More info Camera frequency	60Hz
	
Colour Swing Blue	Monochrome

Figure 6

Figure 6 “is a graphic user interface [800] for user input of simulation parameters.” *Id.* at 5:28–29. According to Figure 6, the simulated effect is a fire effect. *Id.* at 8:5–7. Interface 800 allows the user to select a “fire activity” by sliding the slider between low to high and set values for “fire colour,” “peak brightness,” “baseline brightness,” and “camera frequency.” *Id.* at 8:8–12.

D. Illustrative Claim

Petitioner challenges claims 1–19 of the '044 patent, with claims 1, 12, and 19 being the independent claims. Claim 1, reproduced below, is representative of the challenged claims.

1. A method for controlling a lighting device to produce a range of different user customisable lighting effects, the method comprising:

receiving user input of at least one user input simulation parameter to customise a lighting effect;

storing in memory said at least one user input simulation parameter, said at least one user input simulation parameter depending on the lighting effect being simulated;

recalling from said memory said at least one stored user input simulation parameter;

calculating, using an effect simulator, a time varying lighting value based on said recalled simulation parameter; and

outputting to said lighting device said time varying lighting value thereby to simulate the lighting effect.

Ex. 1001, 11:54–12:3.

E. The Asserted Unpatentability Challenges

Petitioner asserts that claims 1–19 would have been unpatentable on the following grounds:

Claims Challenged	35 U.S.C. §	Reference(s)/Basis
1–19	102 ¹ /103 ²	Astera ³
1–19	102/103 ⁴	Edwards ⁵

Pet. 2. Petitioner also relies on declaration testimony of Mr. Michael Wood (Ex. 1006, “the Wood Declaration”) and Mr. Simon Canins (Ex. 1008) to support its allegations.

¹ The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284 (2011), amended 35 U.S.C. §§ 102 and 103, effective March 16, 2013. Given that the application from which the ’044 patent issued was filed after this date, the current versions of §§ 102 and 103 apply.

² Petitioner alleges only claims 1, 2, 12, 15, and 19 are “anticipat[ed] or render[ed] obvious” in view of Astera. Pet. 10, 35, 38, 58 (emphasis added). For claims 3–11, 13–14, and 16–18, Petitioner alleges instead that Astera “anticipates” or “discloses” the claimed subject matter. *Id.* at 38–58, 62. We understand that Petitioner alleges for this ground that only claims 1, 2, 12, 15, and 19 would have been obvious. As a result, we limit our obviousness discussion below to claims 1, 2, 12, 15, and 19.

³ Astera LED Technology GmbH, AX10 SPOTMAX™ User Manual, dated May 7, 2015 (Ex. 1003, “Astera”), which Petitioner alleges to have a publication date of June 2015. *See* Pet. 36 (Petitioner’s information pertaining to earliest publication date).

⁴ Petitioner alleges only claims 1, 12, 14, and 19 are “anticipat[ed] or render[ed] obvious” in view of Edwards. Pet. 63, 70, 85 (emphasis added). For claims 2–11, 13, and 15–18, Petitioner alleges instead that Edwards “anticipates” or “discloses” the claimed subject matter. *Id.* at 72–84, 86–87. We understand that Petitioner alleges for this ground that only claims 1, 12, 14, and 19 would have been obvious. As a result, we limit our obviousness discussion below to claims 1, 12, 14, and 19.

⁵ Charles Edwards, US 9,743,010 B1, issued August 22, 2017 (Ex. 1004, “Edwards”).

II. ANALYSIS

A. Principles of Law

“In an IPR [*inter partes* review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (2012) (requiring *inter partes* review petitions to identify “with particularity . . . the evidence that supports the grounds for the challenge to each claim”)). This burden of persuasion never shifts to the patent owner. See *Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015) (discussing the burden of proof in *inter partes* review). Furthermore, a petitioner cannot satisfy its burden of proving obviousness by employing “mere conclusory statements.” *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016).

To anticipate, a reference must “show all of the limitations of the claims arranged or combined in the same way as recited in the claims.” *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1370 (Fed. Cir. 2008); accord *In re Bond*, 910 F.2d 831, 832 (Fed. Cir. 1990).

Obviousness is a question of law based on underlying determinations of fact. *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966); *Richardson-Vicks, Inc. v. Upjohn Co.*, 122 F.3d 1476, 1479 (Fed. Cir. 1997). A claim is unpatentable as obvious, under 35 U.S.C. § 103, 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 of the invention to a person having ordinary skill in the art. *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 ordinary skill in the art; and (4) objective evidence of nonobviousness.⁶ *Graham*, 383 U.S. at 17–18.

At this preliminary stage, we determine whether the information presented shows a reasonable likelihood that Petitioner would prevail in establishing that at least one of the challenged claims would have been anticipated by or obvious over the asserted prior art.

We analyze the challenges presented in the Petition in accordance with the above-stated principles.

B. Level of Ordinary Skill in the Art

We review the grounds of unpatentability in view of the understanding of a person of ordinary skill in the art at the time of the invention. *Graham*, 383 U.S. at 17.

Petitioner contends that a person of ordinary skill in the art “would have had a good working knowledge of electrical engineering and entertainment lighting systems, controls, and effects.” Pet. 7–8 (citing Ex. 1006 ¶ 38). Accordingly, Petitioner states that such a person would have had “an undergraduate Bachelor’s degree in electrical engineering, or a comparable field, as well as some experience in the field” and that “the more education one has, the less experience needed to attain an ordinary level of skill. . . . [and] [s]imilarly, more experience in the field may serve as a substitute for formal education.” *Id.* Patent Owner does not, at this time, dispute Petitioner’s proposed definition. *See generally* Prelim. Resp.

On this record, we determine that Petitioner’s proposed definition is consistent with the prior art of record and apply it for this Decision. *See*

⁶ At this stage of the proceeding, the parties have not asserted or otherwise directed our attention to any objective evidence of nonobviousness.

Okajima v. Bourdeau, 261 F.3d 1350, 1355 (Fed. Cir. 2001) (explaining that specific findings on ordinary skill level are not required “where the prior art itself reflects an appropriate level and a need for testimony is not shown” (quoting *Litton Indus. Prods., Inc. v. Solid State Sys. Corp.*, 755 F.2d 158, 163 (Fed. Cir. 1985))). We will make any final determination pertaining to the level of ordinary skill in the art, however, on the full trial record.

C. Claim Construction

Neither Petitioner nor Patent Owner proposes any claim terms for construction. *See* Pet. 7; Prelim. Resp. 3–4. For purposes of this Decision, we need not expressly construe any claim terms at this time. *See Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (holding that “only those terms need to be construed that are in controversy, and only to the extent necessary to resolve the controversy”); *see also Nidec Motor Corp. v. Zhongshan Broad Ocean Motor*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (citing *Vivid Techs.* in the context of an *inter partes* review).

D. Alleged Invalidity Based on Astera

Petitioner alleges that Astera anticipates claims 1–19, or would have rendered obvious the subject matter of claims 1, 2, 12, 15, and 19. Pet. 10–63. Petitioner also relies on the testimony of Mr. Wood to support its arguments. *See id.* Before turning to Petitioner’s assertions based on Astera, however, we address Patent Owner’s threshold argument that Petitioner fails to show sufficiently that Astera is prior art to the ’044 patent.

1. Whether Petitioner Shows Sufficiently that Astera is Prior Art

Petitioner argues that “Astera is prior art under at least 35 U.S.C. § 102(a)(1)” as “the first orders from customers in the United States were in March 2015.” Pet. 8 (citing Ex. 1008 ¶¶ 4–8). Petitioner also contends that

the Astera manual “bears a date of May 7, 2015, which was made publicly available, including to distributors and purchasers of the AX10, beginning in at least June of 2015.” *Id.* Petitioner also relies on the declaration testimony of Mr. Canins, “the R&D Director at Astera,” to corroborate Aster’s public availability. *Id.*

Patent Owner asserts that Petitioner has not demonstrated that Astera is prior art because “Petitioner has failed to ‘identify with particularity’ evidence suggesting the Astera Manual was available ‘before the critical date’ of the ’044 Patent, *i.e.*, April 8, 2016.” *Id.* at 6–7 (citing Ex. 2001 ¶ 67). Patent Owner contends that “Petitioner supports its assertion that the date on that reference is the accurate publication date only with broad conclusory statements regarding the propriety of that date.” *Id.* (citing Ex. 1008 ¶ 6). According to Patent Owner, Astera “includes disclosure of product features that were not released before the priority date of the ’044 patent, let alone as of the asserted May 7, 2015 date.” *Id.* (citing Ex. 2001 ¶ 69). Specifically, Patent Owner identifies the “anti-flicker” and “theft alarm” features accessible through the AsteraApp. *Id.* at 9 (citing Ex. 2001 ¶ 71; Ex. 1003, 32–33). Patent Owner asserts that these features were not released until the summer of 2016, and became available in version 9 of the AsteraApp. *Id.* (citing Ex. 2005, 102–103; Ex. 2007, 1–2; Ex. 2001 ¶ 72). Patent Owner explains that “on June 9, 2016, two months after the priority date of the ’044 Patent[,] . . . the current version of the AsteraAppTM was version 8.43.” *Id.* (citing Ex. 2004, 1–2).

Patent Owner argues that Mr. Canins’ testimony “does not bolster Petitioner’s argument that the Astera Manual was available before the

priority date of the '044 Patent.” *Id.* at 11. Instead, Patent Owner explains that

[a]ll Mr. Canins’ statements support is that some version of the AX10 device was sold prior to the priority date of the '044 Patent with an accompanying user manual, but that does not address the specific issue here – *i.e.*, that *the version Petitioner has submitted as the Astera Manual* was not available until after the priority date of the '044 Patent.

Id. (citing Ex. 2001 ¶¶ 71–75, 78). Patent Owner also alleges that Petitioner was on notice of these discrepancies, as Astera’s prior art status was a “key issue” in European Patent Office Proceedings involving Petitioner, yet Petitioner failed to address the discrepancies here. *Id.* at 12–13 (citing Ex. 2005, 82–87n 102–107, 118–123, 169–204, 227–263, 273–346, 419–455, 524–560; Ex. 2001 ¶¶ 77–81).

In reply, Petitioner argues that: (1) it has “presented evidence sufficient to show, by a preponderance of the evidence, that the Astera Manual was available as prior art to the '044 Patent” (Reply 2), (2) it relies on the Astera Manual and not the AsteraApp as Patent Owner alleges (*id.* at 2–3), (3) Patent Owner’s evidence does not describe the “theft alarm” and “anti-flicker” as new (*id.* at 3), and (4) the “theft alarm” and “anti-flicker” features were available in 2015 (*id.* at 3–4).

Patent Owner responds to Petitioner’s reply arguments and asserts that: (1) “Petitioners bear the burden of proving that a reference is valid prior art” in the first instance and determining public availability is not appropriate for post-institution (Sur-reply 1–2), (2) “the presence of not-yet-released features in the manual throws into question the accuracy of the date printed” on Astera (*id.* at 2–3), (3) the context of the exhibits shows that AsteraApp v. 9 with Talkback+ was, in fact, newly introduced and that the

“Theft Alarm” and “Anti-Flicker” features were included in this new version (*id.* at 3), and (4) the Board should not rely on the evidence introduced in the reply because Petitioner knew or should have known about Patent Owner’s arguments regarding Astera’s prior art status and Petitioner has not shown good cause for failing to address Astera’s prior art status in the Petition (*id.* at 3–5).

A petition must “identify with particularity the grounds for institution and evidence supporting such grounds,” including “the prior art relied upon and evidence that it qualifies as such.” *Hulu, LLC v. Sound View Innovations, LLC*, IPR2018-01039, Paper 29, 13 (PTAB Dec. 20, 2019) (precedential POP decision) (citing 35 U.S.C. § 312(a)). Here, the Petition identifies the grounds for institution and the evidence supporting such grounds, and presents evidence that Astera qualifies as prior art under 35 U.S.C. § 102(a)(1). Pet. 8. Specifically, Petitioner notes that “Astera bears a date of May 7, 2015” and relies on the corroborating testimony of Mr. Canins. Pet. 8. Of particular relevance, Mr. Canins testifies that:

[b]ased on my personal knowledge, the AX10 Manual (attached as Exhibit A) is a true and correct copy of what Astera distributed to customers from at least June 2015 through June 2017 (the date of the next version of the AX10 User Manual).

[f]rom at least June 2015 through 2017, customers and other interested members of the public could also obtain information about the AX10 Product, and copies of the AX10 Manual (Exhibit A), at our website at www.astera-led.com . . . for customers to view, access, and download at least as of June 2015.

Ex. 1008 ¶¶ 6, 8. Petitioner’s evidence submitted with the Petition is sufficient to show a reasonable likelihood that Astera is prior art to the ’044 patent under 35 U.S.C. § 102(a)(1). *See Hulu*, Paper 29 at 13 (“[A]t the institution stage, the petition must identify, with particularity, evidence

sufficient to establish a reasonable likelihood that the reference was publicly accessible before the critical date of the challenged patent and therefore that there is a reasonable likelihood that it qualifies as a printed publication”).

In addition, Petitioner submits further argument and evidence, with its reply, to refute Patent Owner’s allegations that certain product features, that is, the “theft alarm” and “anti-flicker,” were not available until after the priority date of the ’044 patent. *Hulu*, Paper 29 at 14 (explaining that a petitioner may present new evidence “in a reply to a patent owner preliminary response”). Specifically, Petitioner notes that the evidence Patent Owner relies upon “does not call the ‘theft alarm’ or the ‘anti-flicker’ features ‘new’ or ‘added’” in contrast to “when Astera highlighted changes or new features to AsteraApp, . . . by displaying a ‘What’s New’ banner.” Reply 3 (citing Ex. 2005, 102–103; Ex. 1009 ¶ 4; Ex. 2004). Petitioner also relies on Mr. Canins’ testimony that Patent Owner “is wrong that the ‘Anti-Flicker’ and ‘AntiTheft’ features were not available in AsteraApp until 2016” and that “[t]hese features—as depicted in the 2015 AX10 Manual—were available in versions of AsteraApp in 2015.” Ex. 1009 ¶ 5. Mr. Canins testifies that the archived AsteraApp version 8.04, finalized on April 30, 2015, was used to create the 2015 version of the AX10 Manual, and indicates the “theft alarm” and “anti-flicker” features were present in version 8.04. *Id.* at ¶¶ 6–8. This additional evidence further supports a finding, at this stage of the proceeding, that Astera is prior art to the ’044 patent.

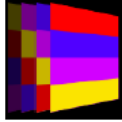
We acknowledge Patent Owner’s concerns regarding Mr. Canins’ purported bias. Sur-reply 4–5. Our rules authorize the cross-examination of those offering the direct testimony. 37 C.F.R. § 42.51(b)(1)(ii). Patent

Owner may test Mr. Canin’s potential bias and the veracity of his statements through robust cross-examination.

At this stage of the proceeding, we find the information presented in the Petition and the Reply sufficiently demonstrates a reasonable likelihood that Astera is prior art to the ’044 patent. Any final decision, however, will be based on the full record developed during the trial. We turn now to Petitioner’s challenges based on Astera after first providing a brief overview of the reference.

2. Overview of Astera (Ex. 1003)

Astera is a user manual for the AX10 Spotmax—a programmable, customizable lighting apparatus that includes an array of light emitting diodes (“LEDs”). Ex. 1003, 7. The AX10 can be controlled in several ways—(1) Astera’s ARC 1 infrared remote, (2) the AsteraApp, (3) by CRMS wireless DMX, (4) or a control panel. *Id.* at 9–11. The Astera lighting control system “can display static colors or replay a number of predefined effect patterns with a customizable color palette.” *Id.* at 24. Exemplary effects are shown in the figure accompanying section 7.7 of Astera and reproduced below:

	A static color is displayed. There are also options that show two, three or four static colors at a time. The Flow-Set is then divided into several parts of equal length: 
	Fading colors. The four defined colors are displayed one after the other. The setup fade is applied between them. Again, the Flow-Set can be split in up to four segments.
	From both sides of a Flow-Set, the color changes position by position from C1 to C2. Once the whole Set is C2, it changes back to C1 in the same way.
	The color of the Flow-Set changes position by position. After all positions show the same color, a new cycle is started.
	Several variations of running lights are available.
	The Fire effect shows a random flickering effect. The background color and the color of the flickering effect can be adjusted.
	The rainbow effect shows a color change through all colors. Only its speed can be adjusted.
	Chaser effects provide an efficient means to create dancefloor lighting. The static chaser exchanges the color of the lights according to the tapped-in beat. The colors are randomly chosen. The effect can be adjusted to show up to 4 different colors at a time.
	The Moving Chasers overlay the static chaser by a second movement of the four displayed colors over the available positions of a Flow-Set. This gets mostly interesting of the Moving Strobe is chosen. Then, only some of the positions strobe and they are moving. So the strobe effect moves over the Flow-Set.
	When using the Chaser With Background, additionally a color can be selected that is mostly used, the background color.

This figure describes ten effects of the Astera lighting system, including static color, fading colors, a color change from both sets a of a flow-set, a flow-set where the color changes in each position, running lights, fire effect, a rainbow effect, chaser effects, moving chasers, and a chaser effect with a

background color. *Id.* at 28. For example, “[t]he fire effect shows a random flickering effect [where] [t]he background color and the color of the flickering effect can be adjusted,” and “[t]he rainbow effect shows a color change through all colors [and] only its speed can be adjusted.” *Id.* Effect parameters—such as speed, crossfade, stroboscope, and brightness—may be adjusted and “may be saved back to the main screen by pressing the save button.” *Id.* at 27.

3. *Analysis*

Petitioner alleges that Astera anticipates or would have rendered obvious the subject matter of claim 1. Pet. 10. Petitioner asserts that “Astera discloses features and functionality of the AX10, a controllable lighting fixture with an array of nine ‘RGBAW’ (*i.e.*, red, green, blue, amber, and white) LEDs” which “can be controlled via various controllers, including the Control Panel and AsteraApp.” *Id.* at 11 (citing Ex. 1003, 7, 9; Ex. 1006 ¶¶ 51–56). Petitioner explains that by using the control panel or AsteraApp, users can produce different “user customizable lighting effects.” *Id.* at 12–19 (Ex. 1006 ¶¶ 53–56; Ex. 1003, 1, 11, 13, 17, 20, 21, 24–29). Therefore, Petitioner asserts that Astera describes a method of controlling a lighting device. *Id.* at 10–19.

Petitioner asserts that “[u]sers can select desired effects and input parameters through interfaces on the Control Panel or AsteraApp.” Pet. 20 (citing Ex. 1003, 8, 9, 11, 20, 23–29). Petitioner explains that “[t]he Control Panel includes an LCD interface that ‘receives’ user selections of a lighting program (*e.g.*, those listed on page 21) and parameters of: (i) intensity; (ii) speed of a cycle of the program; (iii) fade time between steps; and (iv) color selections.” *Id.* (citing Ex. 1003, 20). Petitioner further explains

that “with the AsteraApp, programs of effects, such as ‘wedding,’ maybe selected and ‘highly customized.’” *Id.* at 22 (citing Ex. 27). Thus, Petitioner contends that the user can adjust the effect parameters in each interface. *Id.* at 22, 24 (citing Ex. 1003, 11, 20, 28, 31; Ex. 1006 ¶¶ 57–58).

Petitioner argues that memory can store the user input simulation parameters. Pet. 25 (citing Ex. 1003, 20–21, 24–28; Ex. 1006 ¶¶ 61–67). Petitioner states that “[t]he speed, fade, color, stroboscope, and brightness selectable menu options are based on the user-selected effect, and are presented as parameters for adjusting the particular selected effect.” *Id.* (citing Ex. 1003, 20–21, 24–28). Petitioner explains that “[t]he effects and user adjustments made to them may also be ‘saved back to the main screen by pressing the save button.’” *Id.* (quoting Ex. 1003, 27). According to Petitioner, “[o]nce saved to the main screen, these stored effects (and their modified parameters) can later be recalled and played” within the AsteraApp or through the Control Panel. *Id.* at 26–27 (citing Ex. 1003, 10–12, 14, 17, 20–22, 24, 30, claim 1; Ex. 1006 ¶¶ 62–67).

Petitioner alleges that Astera describes recalling stored user input from memory. *Id.* at 28 (Ex. 1006 ¶¶ 68–71). Petitioner contends that “[i]n AsteraApp, stored effects (within their modified parameters) can be recalled, with lighting values calculated based on the recalled effect and parameters so the effect can be played later.” *Id.* (citing Ex. 1003, 24, 27, 30). “Similarly, in Standalone mode implemented through the Control Panel, saved user parameter settings are ‘recalled’ for the AX10 to ‘replay’ and ‘display’ the customized effect programs with the lights.” *Id.* at 30 (citing Ex. 1003, 10, 17, 20–21).

Petitioner asserts that Astera discloses that “[t]he Control Panel and AsteraApp include effect simulators to calculate time varying lighting values for generating special effects based on recalled simulation parameters,” as claimed. *Id.* at 31 (citing Ex. 1003, 9–11, 13, 17, 21, 24). Petitioner states that when using the Control Panel, users may “‘select’ from predefined effects, and then adjust parameters including intensity (to set a brightness level), speed (to change the time to complete one cycle), fade time, and color.” *Id.* (citing Ex. 1003, claim 1). These “adjusted parameters are [then] stored and [later] recalled from the AX10 (via the Control Panel) in order for the user to make selections and adjustments and play the desired effect.” *Id.* According to Petitioner, “[f]or effect patterns, the values vary with time to change the output of the LEDs, creating the effect.” *Id.* (citing Ex. 1003, 10, 12, 17, 20–21, 24; Ex. 1006 ¶ 73). Petitioner alleges that the AsteraApp operates similarly and “after recalling saved effects, AsteraApp calculates time varying lighting values, including brightness and color information, for these user-customized effects.” *Id.* at 31–33 (citing Ex. 1003, 10, 23–30; Ex. 1006 ¶¶ 72–75).

Lastly, Petitioner argues that “[b]oth the Control Panel and AsteraApp output time-varying lighting values for the AX10 to ‘display these [selected] effects properly with [its] light.’” *Id.* at 34 (citing Ex. 1003, 21).

Petitioner also asserts Astera anticipates or would have rendered obvious claims 2–19. Pet. 35–63. Petitioner first states that “there are no substantive differences between Claim 1 and Claims 12 and 19, and Astera anticipates and renders obvious claims 12 and 19 for the same reasons as Claim 1.” *Id.* at 35–36 (providing a claim chart and additional explanation as to the differences between the challenged independent claims). Petitioner

also explains how Astera discloses the additional limitations of dependent claims 2–11, and 13–18. *Id.* at 37–63 (and evidence cited therein).

At this time, Patent Owner does not address the merits of Petitioner’s contentions regarding the teachings of Astera. Petitioner’s arguments and evidence regarding its challenge based on Astera, therefore, are uncontested at this preliminary stage of the proceeding. *See generally* Prelim. Resp. Based on the information presented in the Petition, we are persuaded that Petitioner demonstrates a reasonable likelihood of prevailing at trial in showing that claims 1–19 of the ’044 patent are unpatentable as anticipated by Astera. Further, because, generally speaking, “anticipation is the ‘epitome of obviousness,’” *Cohesive Techs., Inc. v. Waters Corp.*, 543 F.3d 1351, 1363–64 (Fed. Cir. 2008) (quoting *In re Kalm*, 378 F.2d 959, 962 (CCPA 1967)), a disclosure that anticipates will often generally also render the claim obvious, *In re Meyer*, 599 F.2d 1026, 1030 (CCPA 1979). Accordingly, Petitioner also demonstrates a reasonable likelihood of prevailing at trial in showing that claims 1, 2, 12, 15, and 19 of the ’044 patent would have been obvious over Astera.

As a result, we institute an *inter partes* review of all challenged claims and all grounds presented in the Petition. *See PGS Geophysical AS v. Iancu*, 891 F.3d 1354, 1360 (Fed. Cir. 2018) (indicating that a decision whether to institute an *inter partes* review “require[s] a simple yes-or-no institution choice respecting a petition, embracing all challenges included in the petition”). Nevertheless, we provide the following observations as to Petitioner’s challenges based on Edwards in order to further guide the parties after institution.

E. Alleged Invalidity based on Edwards

Petitioner additionally alleges that Edwards anticipates claims 1–19 or would have rendered obvious claims 1, 12, 14, and 19. Pet. 63–87. Petitioner relies on the testimony of Mr. Wood and Mr. Canins to support its arguments. *See id.*

1. Overview of Edwards

Edwards discloses a system and method for synchronizing LED light fixtures to digital camera shutters. Ex. 1004, code (57) (Abstract). The system controls the LEDs so that “changing of lighting can be synchronized with the times when the shutter is closed so that all frames are complete and are without the visual artifact of the light changing mid frame.” *Id.* The lighting system may be configured to produce lighting effects such a lightening, strobing, a camera flash, street light flicker, fire, or candlelight, while compensating for rolling shutter artefacts . *Id.* at 3:18–28, 11:38–12.1.

The system includes “LED light fixtures” and a “lighting controller.” *Id.* at 5:18–51, 6:49–62. A user may input a camera synchronization signal to the lighting controller, along with “commands that control the lights” and produce the special lighting effects. *Id.* at 5:18–24, 6:57–62, 7:20–8:1.

The lighting controller compensates for rolling shutter artefacts by holding commands to control the lights “until the next vertical frame synch pulse,” then times any lighting transitions for each frame to “occur during the closed shutter period prior to the frame being captured by the camera.” *Id.* at 5:24–29. Edwards, thereby, allows for “synchronization of changes in lighting to the camera shutter for videos and motion pictures. This enables all lighting transitions to be done between frames,” which makes “the

resulting frame image capture clean and free from artifacts that occur when lighting changes” transpire “in the middle of a frame.” *Id.* at 1:25–30.

2. *Whether Petitioner Adequately Sets Forth an Obviousness Case Based on Edwards*

Before providing our observations on the parties’ dispute involving Edwards, we address Patent Owner’s argument that “neither the Petition, nor the Wood Declaration, sets forth a proper obviousness analysis.” Prelim. Resp. 15–16. According to Patent Owner, Petitioner has not presented any analysis regarding the scope and content of Edwards, identified a single difference between Edwards and independent claims 1, 12, and 19,” or “provided any rationale . . . to modify the Edwards reference in such a manner to arrive at the claimed invention.” *Id.* at 16 (citing Ex. 2001 ¶ 92).

Although “novelty under 35 U.S.C. § 102 and nonobviousness under 35 U.S.C. § 103 are separate conditions for patentability,” as we explain above, “anticipation is the ‘epitome of obviousness.’” *Cohesive Techs.*, 543 F.3d at 1363–64 (quoting *In re Kalm*, 378 F.2d at 962). Therefore, evidence that establishes a reasonable likelihood of prevailing on anticipation also generally establishes a reasonable likelihood of success in showing that the claimed subject matter would have been obvious. Further, because Petitioner’s primary argument is that an ordinarily skilled artisan would have understood that Edwards discloses all of the independent claims’ limitations, we are “not required to make any finding regarding a motivation to combine.” *Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1373 (Fed. Cir. 2019); *see also Polygroup Ltd MCO v. Willis Elec. Co.*, 759 Fed. App’x 934, 942–43 (when a petitioner sets forth an obviousness challenge and argues that a single reference “teaches every element of the challenged claims,” the “Board err[s] when it refuse[s] to consider these arguments”).

As such, the Petition sets forth a sufficient obviousness analysis based on Edwards.

3. Observations as to Petitioner's Challenge Based on Edwards

Petitioner alleges that Edwards anticipates or would have rendered obvious claims 1–19. *See, e.g.*, Pet. 4 (table of asserted grounds). At this stage of the proceeding, the parties' dispute centers on whether Petitioner shows sufficiently that Edwards discloses “calculating, using an effect simulator, a time varying lighting value based on said recalled simulation parameter” (“the calculating limitation”), as claim 1 recites.⁷ *See* Pet. 68–69; Prelim. Resp. 17–28. Thus, we focus our observations on this dispute.

Petitioner asserts that Edwards describes the calculating limitation because, in Edwards, “[u]pon issuance of a ‘RECORD’ command, the lighting controllers ‘recall the stored values’ for the desired lighting schemes from memory and ‘replay them in order, sequentially in sync with [a] sync signal.’” Pet. 68 (quoting Ex. 1004, 7:54–8:1; citing Ex. 1006 ¶¶ 143–144). Petitioner continues that “if a user selects stored schemes ‘1, 3, 5, for example,’ the ‘lights would prepare to replay scheme 1, then 3 then 5 in sequence throughout the filming’” and by “replaying selected schemes, the lighting controllers recall the parameters for the selected schemes and calculate the necessary lighting commands sent to the LED lights such that the lights produce the proper lighting for each scheme.” *Id.* (citing Ex. 1004, 7:54–8:1; Ex. 1006 ¶ 144).

⁷ Independent claim 19 also recites the calculating limitation and independent claim 12 recites a substantively similar limitation. *See* Ex. 1001, 12:43–44, 13:12–14. Thus, our observations also apply to these independent claims.

Patent Owner argues that the “Petition and the Wood Declaration misstate the actual teachings of Edwards with respect to this element” and that “Edwards does not disclose calculating a time varying lighting value, let alone calculating a time varying lighting value ‘based on said recalled simulation parameter’ (which is a parameter input by a user).” Prelim. Resp. 17 (citing Ex. 1004, 7:20–8:1; Ex. 2001 ¶¶ 95–96). Specifically, Patent Owner asserts that “[r]ecalling stored lighting schemes and playing them sequentially at evenly-spaced time intervals (*i.e.*, to correspond to the camera shutter) does not involve calculating a time varying lighting value based on the recalled user input parameter.” *Id.* (citing Ex. 2001 ¶ 97). According to Patent Owner, in Edwards, “[t]he cinematographer is simply directing the lighting system to sequentially play pre-stored lighting schemes,” that is, “rather than calculating lighting values, Edwards specifically discloses ***reading stored values***.” *Id.* at 17–18 (citing Ex. 1004 7:63–8:1, 11:27–28; Ex. 2001 ¶ 97).

Patent Owner’s arguments have merit and we have some doubt that Petitioner ultimately will establish that Edwards discloses the “calculating limitation,” which all challenged claims require (either as independent claims or through dependency). At this stage of the proceeding, Patent Owner raises a genuine issue of material fact that we invite the parties to address further should they so desire.⁸ We reserve final consideration of this issue until the record has been fully developed during trial.

⁸ We caution Patent Owner that any arguments it does not raise in its Patent Owner Response are waived, even if the Board discusses them in this Decision. *See, e.g., Unified Patents Inc. v. Nonend Inventions N.V.*, IPR2016-00174, Paper 28, 3–4 (PTAB July 25, 2017) (arguments raised in a patent owner preliminary response but not reasserted in a patent owner

III. CONCLUSION

For the foregoing reasons, we determine that Petitioner has demonstrated a reasonable likelihood that it would prevail with respect to at least one of the claims challenged in the Petition. Accordingly, we institute an *inter partes* review of the '044 patent.

The factual findings set forth in this Decision are preliminary and provided for the sole purpose of deciding whether to institute a review. Any final findings will be based on the full trial record, including any information presented in a timely filed response to the Petition. *See Trivascular, Inc. v. Samuels*, 812 F.3d 1056, 1068 (Fed. Cir. 2016) (noting that “there is a significant difference between a petitioner’s burden to establish a ‘reasonable likelihood of success’ at institution, and actually proving invalidity by a preponderance of the evidence at trial”) (quoting 35 U.S.C. § 314(a) and comparing *id.* with § 316(e)).

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review of claims 1–19 of U.S. Patent No. 10,845,044 B2 is instituted with respect to all grounds set forth in the Petition; and

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

response are waived). Nothing in this Decision authorizes Petitioner to supplement argument or evidence presented in the Petition on any ground in a manner not permitted by our rules.

IPR2022-00099
Patent 10,845,044 B2

FOR PETITIONER:

Joseph Raffetto
Celine Jimenez Crowson
Scott Hughes
HOGAN LOVELLS US LLP

joseph.raffetto@hoganlovells.com
celine.crowson@hoganlovells.com
scott.hughes@hoganlovells.com

FOR PATENT OWNER:

Alison L. McCarthy
Bryan C. Smith
Troutman Pepper Hamilton Sanders LLP

alison.mccarthy@troutman.com
bryan.smith@troutman.com