

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

VIDENDUM PRODUCTION SOLUTIONS, INC.,
Petitioner,

v.

ROTOLIGHT LIMITED,
Patent Owner.

IPR2023-01218
Patent 10,845,044 B2

Before JEFFREY W. ABRAHAM, KIMBERLY McGRAW, and
AVELYN M. ROSS, *Administrative Patent Judges*.

ROSS, *Administrative Patent Judge*.

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

I. INTRODUCTION

Videndum Production Solutions, Inc. (“Petitioner”) filed a petition for an *inter partes* review (Paper 1, “Pet.”) challenging 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. Paper 6 (“Prelim. Resp.”). With authorization from the Board, Petitioner filed a Reply to the Preliminary Response (Paper 6) and Patent Owner filed a Sur-reply (Paper 7).

On January 25, 2025, we entered a decision exercising our discretion, under 35 U.S.C. § 314(a), to deny the Petition because it challenges a patent that was previously challenged before the Board. Paper 9; *see generally* IPR2022-00099 (challenging the ’944 patent). On April 19, 2024, the Director of the United States Patent and Trademark Office granted Director Review, vacated our prior decision, and remanded the case for further proceedings. Paper 12.

We have authority to determine whether to institute an *inter partes* review under 35 U.S.C. § 314 and 37 C.F.R. § 42.4(a). For the reasons set forth below, we institute an *inter partes* review of the challenged claims.

A. Real Parties-in-Interest

Petitioner identifies itself and Videndum PLC as real parties-in-interest. Pet. 63. Patent Owner identifies itself and Rotolight Group Ltd. as real parties-in-interest. Paper 4, 1.

B. Related Proceedings

The parties identify *Rotolight Limited v. Videndum PLC and Videndum Product Solutions, Inc.*, Case No. 22-928-MN-JLH (D. Del.) (“the District Court action”), in which Patent Owner has asserted infringement of

the '044 patent against Petitioner. Pet. 63; Paper 4, 1. Patent Owner identifies three additional district court actions. Paper 4, 2 (listing those actions).

The parties indicate that Arnold & Richter Cine Technik GmbH & Co. Betriebs KG (referred to by the parties as “ARRI”) previously filed an *inter partes* review against the same claims of the '044 patent in IPR2022-00099 (“IPR099”). Pet. 63; Paper 4, 2. Patent Owner identifies seven additional *inter partes* reviews. See Paper 4, 1–2 (listing those proceedings).

C. The '044 Patent (Ex. 1001)

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 specification of the '044 patent, a typical “lighting controller called a ‘flicker box’” may be “used to produce flickering light 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 undesirably require “a physical wired connection to the ‘hot’ light source desired to be controlled.” *Id.* at 1:27–32. Flicker boxes also are “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 '044 patent purports to address those disadvantages and describes methods and devices “for controlling a lighting device to produce user

customizable lighting effect,” for example, by “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 reproduced below, illustrates that solution.

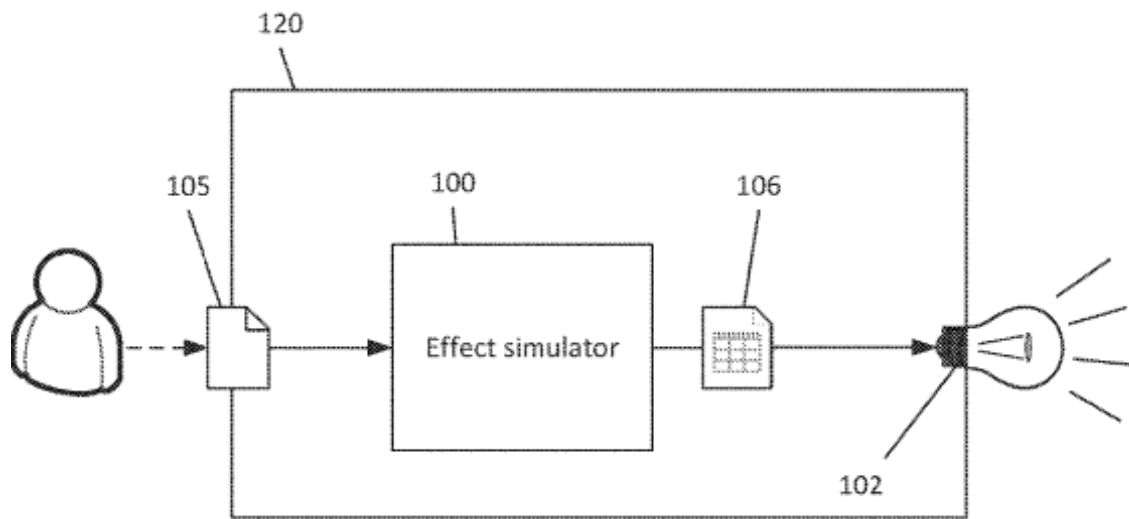


Figure 2

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. For 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.

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 the following grounds of unpatentability:

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

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 (Ex. 1001, code (22)), the current versions of §§ 102 and 103 apply.

² Astera LED Technology GmbH, AX10 SPOTMAX™ User Manual, dated May 7, 2015 (Ex. 1004, “Astera”), which Petitioner alleges to have a publication date of June 2015. *See* Pet. 6–7 (Petitioner’s information pertaining to earliest publication date).

³ Charles Edwards, US 9,743,010 B1, issued August 22, 2017 (Ex. 1003, “Edwards”).

Pet. 3. The Petition is supported by the declaration testimony of Mr. Woody Smith (Ex. 1003) and Mr. Simon Canins (Ex. 1005). The Preliminary Response is supported by the declaration testimony of Dr. Eric Bretschneider (Ex. 2002).

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.⁴ *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 is anticipated by or would have been 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 at least a Bachelor of Science degree in electrical engineering, or a closely related field, along with at least two years of experience in the design of entertaining lighting systems, and the design and use of LED lights.” Pet. 10. Patent Owner does not, at this time, dispute Petitioner’s proposed definition. *See generally* Prelim. Resp.

On this record, Petitioner’s proposed definition appears consistent with the prior art of record and we apply it for purposes of this Decision.

⁴ At this stage of the proceeding, the parties have not asserted or otherwise directed our attention to any objective evidence of nonobviousness.

We will make any final determination pertaining to the level of ordinary skill in the art on the full trial record.

C. Claim Construction

Neither Petitioner nor Patent Owner proposes any claim terms for construction.⁵ *See* Pet. 10; 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 Co. Matal*, 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

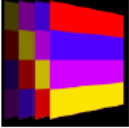
Petitioner alleges that Astera anticipates claims 1–19 (Pet. 11–34) or would have rendered the subject matter of claims 1–19 obvious (*id.* at 34–40). Petitioner relies on the testimony of Mr. Smith and Mr. Canins to support its arguments. *See id.*

1. Overview of Astera (Ex. 1004)

Astera is a user manual for the AX10 Spotmax—a programmable, customizable lighting apparatus that includes an array of light emitting diodes (“LEDs”). Ex. 1004, 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

⁵ As discussed in more detail below, the parties’ dispute, discussed below, centers on the term “calculating a time varying lighting value” (i.e., the “calculating” limitation). The parties are encouraged to address the construction of the “calculating” limitation over the course of trial.

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 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 [f]ire 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.

2. *Analysis*

a) *Claim 1*

Petitioner alleges that Astera anticipates or would have rendered obvious the subject matter of claim 1. Pet. 11, 34. Petitioner asserts that Astera discloses features and functionality of the AX10 and “is 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, remote control, and AsteraApp.” *Id.* at 11 (citing Ex. 1004, 7, 9–10; Ex. 1003 ¶¶ 50–52). Petitioner explains that by using the control panel or AsteraApp, users can produce different “user customizable lighting effects.” *Id.* at 11–19 (Ex. 1003 ¶¶ 53–58; Ex. 1004, 1, 8, 11, 13, 17, 20–21, 24–29). Therefore, Petitioner asserts that Astera describes a method of controlling a lighting device. *Id.* at 11–12.

Petitioner asserts that “[u]sers can select desired effects and input parameters through interfaces on the Control Panel or AsteraApp.” Pet. 12

(citing Ex. 1004, 8–9, 11, 13, 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. 1004, 11, 20). Petitioner further explains that “[w]ith the AsteraApp, programs of effects may be selected and ‘highly customized.’” *Id.* at 13 (citing Ex. 1004, 27). Thus, Petitioner contends that the user can adjust the effect parameters in each interface. *Id.* at 28, 31.

Petitioner argues that memory can store the user input simulation parameters. Pet. 14 (citing Ex. 1004, 20–21, 24–28, 30; Ex. 1003 ¶¶ 64–71). 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.* at 13 (citing Ex. 1004, 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.* at 14 (quoting Ex. 1004, 24–27). According to Petitioner, “[o]nce saved to the main screen, these stored effects (with their modified parameters) can later be recalled and played” within the AsteraApp or through the Control Panel. *Id.* at 14–15 (citing Ex. 1004, 10–11, 14, 17, 20–21, 24, 30, claim 1; Ex. 1003 ¶¶ 67–71).

Petitioner alleges that Astera describes recalling stored user input from memory. *Id.* at 16 (Ex. 1003 ¶¶ 72–76). Petitioner contends that “[i]n AsteraApp, stored effects (with 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. 1004, 24, 27, 30).

Similarly, “[i]n Standalone mode through the Control Panel, saved user parameter settings are ‘recalled’ to ‘replay’ and ‘display’ the customized effect programs with the lights.” *Id.* at 16 (citing Ex. 1004, 10, 17, 20–21).

Petitioner asserts that Astera discloses that the 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 18–19 (citing Ex. 1004, 9–11, 13, 17, 20–21, 23–24, 27–28; Ex. 1003 ¶¶ 78–81). 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. 1004, 20, claim 1). Petitioner explains that “[b]ased on these selections input using the Control Panel, the AX10 creates data characterizing the adjusted lighting effect, in the form of values and settings for the LEDs to ‘display these effects properly with [the] light.’” *Id.* at 18–19 (citing Ex. 1004 17, 20–21; Ex. 1003 ¶¶ 78–79). Petitioner alleges that the AsteraApp operates similarly and “parameters that are input using the AsteraApp are calculated, using a processor, and the calculated time varying lighting values, including brightness and color information user-customized effects are output by the AX10.” *Id.* at 19 (citing Ex. 1004, 23–29; Ex. 1003 ¶ 81). Petitioner thus reasons that because “Astera is ‘highly customized’ by adjusting parameters . . . [w]hen parameters for a selected effect are changes, a ‘calculation’ (such as the creation of data) creates new values to send to the lights and generate

an effect reflecting the adjusted parameters.” *Id.* at 20 (citing Ex. 1004, 21, 27–28; Ex. 1003 ¶ 80).⁶

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 20 (citing Ex. 1004, 21; Ex. 1003 ¶¶ 82–86).

Petitioner also asserts Astera would have rendered obvious claim 1. Pet. 34–40. Petitioner claims that

[t]he prior art is extremely close, if not identical, to the ’044 Patent. If an alleged silence in a reference (*e.g.*, that a prior art reference does not explicitly use the word “calculate” or describe a “calculation” in detail—much like the ’044 Patent itself) is a purported “difference” between the prior art and the claimed invention in the context of anticipation, such “difference” would have been obvious to a POSITA based on the same evidence that supports anticipation.

Pet. 34 (citing Ex. 1003 ¶¶ 155–168). Specifically, Petitioner argues that

[i]f the Board finds Claims 1[d], 12[d], and 19[d] are not expressly disclosed, . . . [a person of ordinary skill in the art] would have understood that the effect simulator’s use of the user input parameters to generate or create the lighting effect is done by a calculation (*i.e.*, taking the sum of the parameter values and averaging them to generate a lighting effect matching those numeric parameters).

⁶ Petitioner also asserts that “[i]f Rotolight argues Astera does not disclose the ‘calculate’ limitation, this would contradict its own infringement allegations” in the parallel litigation. Pet. 19. There, according to Petitioner, Patent Owner asserts that “calculating” is satisfied by “inputting of ‘parameters’ into a lighting device via a user interface, which in turn causes the lights to display a lighting effect based on recalled pre-set parameters.” *Id.* at 20 (citing Ex. 1009, 68).

Id. at 35–36 (citing Ex. 1003 ¶ 157). According to Petitioner, “Astera allows a user to customize parameters, which in turn requires the creation of new lighting values that need to be created (i.e., ‘calculated’)” and “[w]hile an underlying pattern may not change in Astera (e.g., a fire effect will always be a random flickering between two colors), based on parameter adjustments, a [person of ordinary skill in the art] would understand that different visual effects **will be generated each time.**” *Id.* at 36 (citing Ex. 1003 ¶ 165). Petitioner explains that a person of ordinary skill in the art “would not understand from Astera that the AX10 pre-stores in tables sequences of brightness and color values for **every possible combination** of effects and parameters” but rather “would understand that the specific data (i.e., brightness and color values) for an effect—whether a random fire flicker, strobe, or color—is created (i.e., “calculated”) **after** the user selects the effect and customizes its parameters. *Id.* at 36–37 (citing Ex. 1003 ¶¶ 157–167).

Patent Owner, at this time, does not challenge many of Petitioner’s allegations regarding the teachings of Astera. *See generally* Prelim. Resp. Instead, Patent Owner focuses its argument on whether Petitioner has shown Astera teaches “calculating, using an effect simulator, a time varying lighting value” (*id.* at 28) and whether Petitioner has established obviousness in view of Astera (*id.* at 34). On this preliminary record, Petitioner’s unchallenged arguments and evidence are sufficient for purposes of institution to show that Astera discloses or suggests each limitation of claim 1 of the ’044 patent, other than the “calculating limitation.” We address Patent Owner’s argument regarding the “calculating limitation” and obviousness below.

b) Whether Petitioner has shown Astera teaches “calculating, using an effect simulator, a time varying lighting value”

Patent Owner contends that Astera does not disclose calculating because the Astera Manual only discloses replaying pre-defined lighting values and “[r]eplaying pre-defined patterns is distinct from ‘calculating . . . a time varying lighting value’ (cls. 1, 19) or ‘calculate a time varying lighting value’ (cl. 12).” Prelim. Resp. 28. According to Patent Owner, although “[t]he Astera Manual also discloses customizing the available lighting effects using the AsteraApp™ . . . customizing does not alter the underlying pattern, and is therefore distinguishable from the ‘calculating’ limitation required by the claims of the ’044 patent.” *Id.* (citing Ex. 1004, 27; Ex. 2002 ¶ 129). In particular, Patent Owner asserts that the Astera Manual simply recalls and replays pre-programmed effects. *Id.* (“The Astera Manual merely discloses recalling and replaying pre-defined effects”), 29 (“a POSITA would have understood that each of the points on the above graph . . . are pre-programmed into the controller . . . and merely sequentially recalled to simulate fire”), 30 (in the Astera Manual, the “data point already exists – it was selected or recorded ahead of time and loaded into the Astera lighting device’s memory”), 30–31 (“recalling and replaying pre-defined effects does not disclose ‘calculating’”), 31–32 (citing Ex. 1004, 10, 17, 20–21, 24, 28; Ex. 2002 ¶¶ 78–98, 130–143). Patent Owner contrasts the Astera Manual with the teachings of the ’044 patent which purportedly “‘calculate[e] . . . a time varying lighting value,’ [which] creates data that is later output as a lighting effect.” *Id.* at 29 (Ex. 1001, 7:28–36; Ex. 2002 ¶¶ 130–131); *see also id.* at 30 (stating that “the algorithm disclosed in the ’044 Patent is distinct from systems, like that disclosed in

the Astera Manual, that ‘simply sampl[e] the intensity of a real flame and replay[] it.’”) (citing Ex. 1001, 9:42–10:29; Ex. 2002 ¶¶ 78–98, 133–136).

Patent Owner argues that Petitioner mischaracterizes Astera by asserting “that the ability to customize the Astera Manual’s pre-defined effects patterns constitutes ‘calculating.’” *Id.* at 32 (citing Ex. 2002 ¶ 146). Patent Owner explains that there is a difference between “calculation,” required by the ’044 patent, and “parameteriz[ation],” discussed in Astera. *Id.* at 33 (citing Ex. 1004, 24; Ex. 2002 ¶¶ 147–148). Patent Owner states that “[w]hile a user may adjust the playback speed, color, or overall intensity of a pattern in the Astera Manual, the underlying pattern is not actually changed – thus, further demonstrating no calculation is performed.” *Id.* at 34.

For purposes of institution, Petitioner has adequately shown that Astera “calculates a time varying lighting value,” as claimed. Petitioner explains that the ’044 patent describes “calculating” in Figure 3. Pet. 17–18. Figure 3 of the ’044 patent is reproduced below.

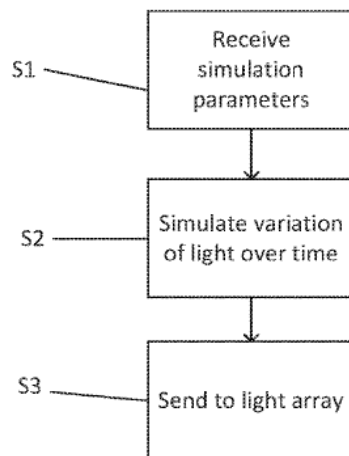


Figure 3

Figure 3 “illustrates a simple example of a method of simulating a lighting effect.” Ex. 1001, 7:19–21. According to the ’044 patent,

[i]n a first step S1 simulation parameters are received, such as random parameters and/or user-selectable parameters. . . . In a second step S2 a simulation is performed based on a simulation model and the received parameters. . . . [And,] in a third step S3 the lighting information determined by the simulation is output, for example to a lighting device, in order to produce the desired lighting effect.

Id. at 7:20–36. Based on the arguments presently before us, Astera appears to operate in the same manner as the ’044 patent. *See* Pet. 18–20. In particular, Astera allows a user to select from various lighting effects and then “highly customize” the lighting effects by adjusting certain parameters (such as speed, color, and brightness), which in turn are displayed on a lighting device. Ex. 1004, 23–29; Ex. 1003 ¶¶ 78–81.

Patent Owner’s argument that “recalling and replaying” prestored effects (Prelim. Resp. 28–32) or customizing and adjusting parameters (*id.* at 30) does not satisfy the “calculating” limitation, does little to apprise us of what constitutes “calculating a time varying lighting value.” Patent Owner implies that in order to calculate a time varying lighting value, the underlying pattern must be changed. *Id.* at 27–28, 34; Ex. 2002 ¶ 150. However, Patent Owner does not direct our attention to portions of the ’044 patent or other evidence⁷ to support such an understanding.

⁷ Patent Owner directs our attention to the testimony of Eric Bretschneider, who testifies that “[w]hile a user may adjust the playback speed, color, or overall intensity of a pattern in the Astera Manual, the underlying pattern is not actually changed – thus, further demonstrating no calculation is performed.” Ex. 2002 ¶ 150. But, that testimony is not adequately supported by underlying facts and data. *See In re Ethicon, Inc.*, 844 F.3d 1344, 1348, 1352 (Fed. Cir. 2017); *Xerox Corp. v. Bytemark Inc.*, IPR2022-

At this stage of the proceeding, Petitioner has demonstrated a reasonable likelihood of prevailing at trial in showing that claim 1 of the '044 patent is anticipated by Astera. As noted above (*see* footnote 5), the ultimate resolution of this issue may depend on the proper construction of the term “calculating.” Neither party, however, presents an express construction of that term. Because genuine issues of material fact remain, we invite the parties to address these issues further, including construction of the term “calculating,” during the course of the trial.

c) Whether Petitioner Adequately Sets Forth an Obviousness Case Based on Astera

Patent Owner argues that “Petitioner fails to provide an element-by-element obviousness analysis, and resorts primarily to conclusory assertions that differences ‘would have been obvious to a POSITA based on the same evidence that supports anticipation.’” Prelim. Resp. 34 (citing Pet. 34). Patent Owner asserts that Petitioner incorrectly applies *Realtime Data LLC v. Iancu*, 912 F.3d 1368, 1373 (Fed. Cir. 2019), for the mistaken proposition that where a Petitioner asserts, but does not succeed, on an anticipation ground the Board may still find the claims obvious. *Id.* Patent Owner disagrees with Petitioner’s assertion that “the '044 Patent does not provide specifics regarding how the calculation is performed.” *Id.* at 35. Instead, Patent Owner asserts that the '044 patent describes two specific algorithms for performing a calculation—i.e., (1) a sequence of instructions to simulate fire, and (2) a sequence of instructions to simulate lighting. *Id.* (citing Ex. 1001, 9:7–16, 10:47–11:8. Patent Owner argues that “[c]ustomization of

00624, Paper 12 at 5 (PTAB Feb. 10, 2023) (Decision Granting *Sua Sponte* Director Review).

pre-recorded values (as disclosed in the Astera Manual) does not anticipate ‘calculating, using an effect simulator, a time varying lighting value.’” *Id.* at 37. And, Patent Owner contends that Petitioner’s description of Astera’s random effects, such as fire, strobe, and chaser as not being pre-recorded, is speculative. *Id.* Lastly, Patent Owner argues that “Petitioner’s generic statements relying on Astera’s disclosure and hindsight bias are insufficient to show why one of ordinary skill in the art would have altered Astera in the manner necessary to arrive at the inventions claimed in the ’044 Patent.” *Id.* at 38.

On this preliminary record, and for purposes of institution, Petitioner’s arguments and evidence adequately support its contention that claim 1 is would have been obvious in view of Astera. Pet. 34–39. 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., Inc. v. Waters Corp.*, 543 F.3d 1351, 1363–64 (Fed. Cir. 2008) (quoting *In re Kalm*, 378 F.2d 959, 962 (CCPA 1967)). Therefore, evidence that establishes a reasonable likelihood of prevailing on anticipation may also be used to 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 Astera discloses all of the independent claims’ limitations, we are “not required to make any finding regarding a motivation to combine.” *Realtime Data*, 912 F.3d at 1373; *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”).

Petitioner does not, however, rest solely on its anticipation contentions to support its obviousness grounds. *See generally* Pet. 34–39. Petitioner additionally contends that a person of ordinary skill in the art “would understand that the effect simulator’s use of the user input parameters to generate or create the lighting effect is done by a calculation (*i.e.*, taking the sum of the parameter values and averaging them to generate a lighting effect matching those numeric parameters).” Pet. 36 (citing Ex. 1003 ¶ 157). Patent Owner does not address whether “summing” and “averaging” occurs in Astera or whether each are considered “calculating” within the context of the ’044 patent. *See generally* Prelim. Resp. Petitioner further relies on the testimony of Dr. Bretschneider, Patent Owner’s declarant, who opines that “the ‘calculating’ limitation . . . is something ‘routine’ that would ‘be within the knowledge’ of a POSITA.” Pet. 36 (citing Ex. 1008, 149:11–153:9, 185:7–188:13). Petitioner explains that “[w]hile an underlying pattern may not change in Astera (*e.g.*, a fire effect will always be a random flickering between two colors), based on parameter adjustments, a POSITA would understand that different visual effects **will be generated each time**” and “that the specific data (*i.e.*, brightness and color values) for an effect—whether a random fire flicker, strobe, or color—is created (*i.e.*, ‘calculated’) **after** the user selects the effect and customizes its parameters.” *Id.* at 36–37 (citing Ex. 1003 ¶¶ 157–167). According to Petitioner, and its declarant Mr. Smith, a person of ordinary skill in the art would not understand that Astera stores “**every possible combination** of effects and parameters, and then recalls the specific relevant sequence and

replays it (like an MP3) when a user ‘selects’ the precise combination in question.” *Id.* at 36 (citing Ex. 1003 ¶¶ 157–167). Petitioner rationalizes that even though Astera does not use the word “calculation,” it operates in the same manner as the ’044 patent. *Id.* at 34, 37. Specifically

[t]he ’044 Patent requires (1) a parameter related to an effect is received, (2) “calculation” (or creation of data) is performed to generate lighting value data to change the light output accordingly, and (3) the data is sent to the LEDs to output the light. This is exactly what Astera describes: (1) parameters such as color, intensity, and fade for different steps of an effect are input through the Control Panel (Standalone) or AsteraApp; (2) data values reflecting these parameters are created (*i.e.*, “calculated”), (3) and the values are sent to the LEDs to produce the effect.

Id. at 37 (citing Ex. 1004, 20–21, 27–28; Ex. 1003 ¶¶ 155–168). Petitioner additionally alleges that “it would have been obvious . . . to mathematically calculate the effect on the fly, dynamically, based on user parameters . . . as it would have created a robust and dynamic lighting effect system that can utilize real-time adjustments.” *Id.* at 38 (citing Ex. 1003 ¶¶ 165–168). As such, the Petitioner also demonstrates a reasonable likelihood of prevailing at trial in showing that claim 1 would have been obviousness in view of Astera.

d) Remaining Claims (2–19)

Petitioner also asserts that claims 2–19 are anticipated by or would have been obvious in view of Astera. Pet. 21–40. Patent Owner does not separately address remaining claims 2–19 beyond what is argued for claim 1. *See generally* Prelim. Resp. For the reasons discussed above for claim 1, Petitioner similarly demonstrates a reasonable likelihood of prevailing at trial in showing that claims 2–19 would have been anticipated or rendered

obvious by Astera. *See also* Pet. 21–34 (detailing Petitioner’s contentions for the remaining claims 2–19).

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”).

E. Alleged Invalidity based on Edwards

Petitioner additionally alleges that Edwards anticipates claims 1–19 (Pet. 40–58) or would have rendered the subject matter of claims 1–19 obvious (*id.* at 58–61). Petitioner relies on the testimony of Mr. Smith and Mr. Canins to support its arguments. *See id.*

1. Overview of Edwards (Ex. 1006)

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 as lightning, 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 artifacts by holding commands to control the lights “until the next vertical frame sync 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. *Analysis*

a) *Claim 1*

Petitioner alleges that Edwards anticipates or would have rendered obvious claim 1. *See, e.g.*, Pet. 4 (table of asserted grounds), 40.

Petitioner asserts that “Edwards discloses a method and system for producing different user-customizable lighting effects, including ‘a simulated camera flash, lighting pattern or gun flash.’” *Id.* at 40 (citing Ex. 1006, 3:18–25, 11:21–53, Abstr.). Petitioner explains that users can customize the lighting effects by adjusting “the ‘light levels, and the color control,’ among other parameters, for the lights” through inputting parameters on a control panel or DMX control board. *Id.* at 40–41 (citing Ex. 1006, 6:51–7:2, 7:20–9:6, 10:60–11:32, 15:46–16:43; Ex. 1003 ¶¶ 169–176). According to Petitioner, the controller receives user input that controls the lights by creating “lighting schemes” and a “sync signal” that relates to camera parameters. *Id.* at 41 (citing Ex. 1006, 3:13–28, 5:18–23).

Therefore, Petitioner asserts that Edwards describes a method of controlling

a lighting device where the user can adjust the effect parameters in each interface. *Id.* at 40–41.

Petitioner argues that memory can store the user input simulation parameters. Pet. 41–42. Specifically, Petitioner explains that

[a]fter the user inputs the parameters to set up the lights with the correct settings for the desired schemes, Edwards discloses that a “STORE” command can be issued so that “[m]ultiple schemes can be stored, preferably digitally, each featuring different light levels, color controls and other settings per active LED light.... Each light would have memory storage for all digital settings corresponding to each scheme.

Pet. 42 (citing Ex. 1006, 5:48–52, 6:35–39, 6:51–62, 7:20–40, 7:45–53, 8:62–66); *see* Ex. 1003 ¶¶ 180–181. Petitioner further alleges that Edwards describes recalling stored user input from memory “so that selected lighting effects and schemes can be replayed by the lights.” Pet. 43 (Ex. 1006, 6:51–62, 7:20–65; Ex. 1003 ¶ 182).

Petitioner asserts that Edwards discloses a lighting controller that “‘can be included inside each individual LED light fixture,’ or it can be ‘an external third system’” that calculates “time varying lighting values in multiple ways. Pet. 43 (citing Ex. 1006, 5:18–31, 6:57–62, 7:20–8:1, 10:59–66, 15:46–16:36; Ex. 1003 ¶¶ 183–184). In particular, Petitioner explains that Edwards calculates a time varying lighting value when “creating lighting values corresponding to ‘lighting schemes’” and in “dynamic lighting.” *Id.* Petitioner explains that “Edwards’ ‘lighting schemes’ comprise user inputs of parameters such as light levels, color temperature, and dimming (i.e., simulation parameters)” and “dynamic lighting” is used “for special effects, including ‘[f]ire, candle and lantern light,’ which requires ‘randomly changing level of light.’” *Id.* (citing Ex. 1006, 11:33–53;

Ex. 1003 ¶¶ 183–184). Petitioner states that “schemes do not exist until users provide their desired input parameters” and “are not and cannot be prestored.” *Id.* at 44. Thus, when inputs corresponding to various parameters are “received after a user inputs them, [they] are recalled and used by the controller to create (‘calculate’) lighting values that are transmitted to lighting devices when a lighting scheme is run.” *Id.* (citing Ex. 1003 ¶¶ 183–184).

In addition, “[t]he controller has to utilize the simulation parameters in conjunction with the sync signal to create lighting values for each new scheme created by the user.” *Id.* And, using the sync signal to adjust the timing of the schemes, “requires a ‘calculation.’” *Id.* at 44–45 (citing Ex. 1006, 7:20–65, 7:54–8:1, 8:37–45, Ex. 1003 ¶¶ 183–184); *id.* at 45 (“Creating new data points for a new graph is ‘calculating’ new lighting values; that is, the lighting values are changing by applying the sync signal.”). Petitioner also asserts that because the combinations of schemes would be countless, preprogramming each of the effects would not be possible. *Id.* at 45 (citing Ex. 1003 ¶¶ 183–184).

Lastly, Petitioner argues that “[t]he commands from the lighting controller in Edwards are output to the LED lights, causing it to produce effects such as ‘a simulated camera flash, lighting pattern or gun flash.’” Pet. 46 (citing Ex. 1006, 3:18–28, 5:24–29, 11:33–53, Abstr.; Ex. 1003 ¶¶ 185–187). Petitioner explains that “[b]y using “synchronized lighting[,] the controller may in addition read a system time stamp and play a lighting ‘scrip’ or series of commands [which] allows special effects and lighting timing to be replayed perfectly, synchronized across different takes.” *Id.* at 46 (citing Ex. 1006, 5:38–42). Thus, Edwards “output[s] to said lighting

device said time-varying lighting value to simulate the lighting effect,” as claimed.

Petitioner also asserts Edwards would have rendered obvious claim 1. Pet. 59–60. Petitioner relies on the same contentions advanced for claim 1 above and adds further details regarding its obviousness position relating to the calculating limitation. Petitioner argues that [i]f the Board finds Claims limitations 1[d], 12[d], and 19[d] are not expressly disclosed, in Edwards, they would have been obvious to a POSITA” and that

the ’044 Patent does not provide **any** specifics regarding how the “calculation” is purportedly performs [sic]. A POSITA would understand that the effect simulator’s use of the user input parameters to generate or create the lighting effect is done by a calculation (*i.e.*, taking the sum of the parameter values and averaging them to generate a lighting effect matching those numeric parameters).

Pet. 59 (citing Ex. 1003 ¶¶ 226–228). Petitioner alleges that the “calculating” limitation “is something ‘routine’ that would ‘be within the knowledge’ of a POSITA.” *Id.* (citing Ex. 1008, 150:14–21, 152:10–22, 185:7–188:13). According to Petitioner,

[i]f an alleged silence in a reference (e.g., that a prior art reference does not explicitly use the word “calculate” or describe a “calculation” in detail) is a purported “difference” between the prior art and the claimed invention in the context of anticipation, such “difference” would have been obvious to a POSITA based on the same evidence that supports anticipation.

Id. at 59–60 (citing Ex. 1003 ¶¶ 227–229). Petitioner reiterates its arguments that Edwards “calculates” a time varying lighting value by “creating lighting values corresponding to ‘lighting schemes’” and “adjusting the sequencing and timing of lighting schemes.” *Id.* at 60 (citing Ex. 1003 ¶¶ 230–240).

Patent Owner, at this time, does not challenge many of Petitioner’s allegations regarding the teachings of Edwards. *See generally* Prelim. Resp. Instead, Patent Owner focuses its argument on whether Petitioner has shown Edwards teaches “calculating, using an effect simulator, a time varying lighting value” (*id.* at 42) and whether Petitioner has established obviousness in view of Edwards (*id.* at 40). On this preliminary record, Petitioner’s unchallenged arguments and evidence are sufficient for purposes of institution to show that Edwards discloses or suggests each limitation of claim 1 of the ’044 patent, other than the “calculating limitation.” We address Patent Owner’s argument regarding the “calculating limitation” and obviousness below.

b) Whether Petitioner has shown Edwards teaches “calculating, using an effect simulator, a time varying lighting value”

Patent Owner argues that the “Petition misstates the actual teachings of Edwards with respect to the calculating limitation” and that a person of ordinary skill in the art would have understood that “Edwards’ system does not calculate a time varying lighting value based on the recalled simulation parameter.” Prelim. Resp. 42. Patent Owner disagrees that “calculating” is met by Edwards—i.e., that the user-input and “sync signal” adjustment methods do not, in fact, show “calculating.” *Id.*

Patent Owner contends that Petitioner improperly asserts that Edward’s user-input scheme “calculates” lighting values. Prelim. Resp. 42–43. Patent Owner argues that, contrary to Petitioner’s assertions, “where a user inputs specific lighting values, the output of those values does not require a calculation as Petitioner alleges—it merely requires playing what the user input.” *Id.* at 43 (citing Ex. 2002 ¶¶182, 186–187). Patent Owner further contends that the ’044 patent distinguishes between *converting* user

inputs and *calculating* a time varying lighting value. *Id.* Specifically, Patent Owner states

[t]he '044 Patent illustrates that merely converting user inputs to signals the lighting device can execute is *not* “calculating ... a time varying lighting value.” *See* EX1001, 8:27–39 (describing the converter that receives the data 106 *from* the effect simulator 102), FIG. 2. In particular, the '044 Patent describes a “converter” (which converts the time varying lighting values generated by the effect simulator into a form that the lighting device can process) as a distinct component from the “effect simulator” which *calculates time varying* lighting values.

Id. (citing Ex. 1001, 8:27–39, Fig. 2). Patent Owner states that “[i]n Edwards, all that happens is lighting values are entered by a user (to define a ‘scheme’), stored, and recalled” and “the cinematographer adjust each light until he/she has the desired setting on all lights for the ‘lighting scheme,’ after which ‘all lights would prepare to replay’ the schemes.” *Id.* at 44 (citing Ex. 1006, 7:23–8:1). Patent Owner asserts that “calculation of a ‘time varying lighting value’ claimed in the '044 Patent is not the mere conversion of a user input to the actual values sent to the LEDs. . . . [r]ather, . . . [it is] calculation of ‘lighting values’ such as brightness and color data.” *Id.* at 45.

With respect to the application of sync signals, Patent Owner contends Petitioner’s argument “fails because sync signals merely synchronize the timing of the output of pre-defined lighting schemes.” Prelim. Resp. 45. Patent Owner argues that “no calculation is required to synchronize the lighting transitions to the frame rate of the camera . . . [and] Edwards simply ‘wait[s] for the rising edge of the sync signal to trigger turning on each scheme frame.” *Id.* at 46 (citing Ex. 1006, 7:58–60, Fig. 4). Patent Owner

explains that Edwards “[h]old[s] the next transition of a pre-defined lighting effect until the camera shutter is closed.” *Id.* at 47 (citing Ex. 2002 ¶ 181).

Here, based on the present record, Petitioner adequately establishes that Edwards teaches calculating a time varying lighting value. Petitioner explains that calculating occurs when “a ‘lighting controller’ (effect simulator) . . . receives (a) ‘commands that control the lights’ (*e.g.*, to produce an effect on the light) and (b) a ‘sync signal’ for when the lights should turn on/off.” Pet. 43 (citing Ex. 1006, 5:18–23; Ex. 1003 ¶¶ 183–184). For example, Edwards describes creating lighting schemes through user input of various parameters (including color, lighting levels, and dimming) and allows for special effects that randomly change the lighting to simulate fire, candles, or the like. Ex. 1006, 11:33–53. According to Edwards, the user inputs these lighting schemes, they are recalled, and then used by the controller to create (or calculate as Petitioner alleges) the lighting values when the lighting scheme is executed. *Id.* at 7:54–8:1. Edwards also describes calculating when the lighting schemes are recalled and replayed and synchronized using a sync signal. *Id.* at 7:54–8:46.

Patent Owner—as it does with Astera—argues that replaying user input is not calculating. Prelim. Resp. 43–44. Patent Owner’s arguments raise factual issues that are better resolved during the trial. With respect to Patent Owner’s second argument, that “no calculation is required to synchronize the lighting transitions to the frame rate of the camera,” Patent Owner appears to oversimplify Edwards’ teachings. While Edwards does explain that “[a] smart signal can turn on the lighting scheme with a rising edge and turn it off with a falling edge,” Edwards states that “[t]his is preferably *carefully timed with the frame capture* on the camera to make

sure the lighting and frame capture are cleanly synchronized.” Ex. 1006, 8:42–46. Edwards thus seems to suggest synchronization involves calculations. *Id.* at 15:65–16:6.

Based on the foregoing, at this stage in the proceeding, Petitioner has demonstrated a reasonable likelihood of prevailing at trial in showing that claim 1 of the ’044 patent is anticipated by Edwards. The resolution of this issue may depend on the proper construction of the term “calculating.” Because genuine issues of material fact remain, we invite the parties to address these issues further, including construction of the term “calculating,” during the course of the trial.

c) Whether Petitioner Adequately Sets Forth an Obviousness Case Based on Edwards

Patent Owner argues that “the Petition does not set forth any proper obviousness analysis” for Edwards. Prelim. Resp. 40–41. 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 41. Patent Owner further asserts that “even if a proper obviousness analysis has been presented,” Petitioner fails to show that Edwards’ lighting system calculates a time varying lighting value as claimed. *Id.* at 41–42.

On this preliminary record, Petitioner’s arguments and evidence adequately support its contention that claim 1 is obvious in view of Edwards. Pet. 59–61. As we explained above, “anticipation is the ‘epitome of obviousness.’” *Cohesive Techs.*, 543 F.3d at 1363–64 (quoting *Kalm*, 378 F.2d at 962).

Here, Petitioner argues, as it does above, that a person of ordinary skill in the art “would understand that the effect simulator’s use of the user input parameters to generate or create the lighting effect is done by a calculation (*i.e.*, taking the sum of the parameter values and averaging them to generate a lighting effect matching those numeric parameters).” Pet. 59 (citing Ex. 1003 ¶¶ 226–228). Again, Patent Owner does not address whether “summing” and “averaging” occurs in Edwards or whether each are considered “calculating” within the context of the ’044 patent. *See generally* Prelim. Resp. Petitioner alleges that the difference between Edwards and the ’044 patent is the absence of the word “calculate” which would have been understood to be “‘something ‘routine’ that would ‘be within the knowledge’ of a POSITA.” Pet. 36 (citing Ex. 1008, 149:11–153:9, 185:7–188:13). Accordingly, the Petition sets forth a sufficient obviousness analysis based on Edwards.

d) Remaining Claims (2–19)

Petitioner also asserts that claims 2–19 are anticipated by or would have been obvious in view of Edwards. Pet. 47–61. Patent Owner does not separately address remaining claims 2–19 beyond what is argued for claim 1. *See generally* Prelim. Resp. For the reasons discussed above for claim 1, Petitioner similarly demonstrates a reasonable likelihood of prevailing at trial in showing that claims 2–19 would have been anticipated or rendered obvious by Edwards. *See also* Pet. 47–59 (detailing Petitioner’s contentions for the remaining claims 2–19).

III. CONCLUSION

For the foregoing reasons, 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.

IPR2023-01218
Patent 10,845,044 B2

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