

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

VITEC PRODUCTION SOLUTIONS, INC.
Petitioner,

v.

ROTOLIGHT LIMITED
Patent Owner.

Case: IPR2022-00261
U.S. Patent No. 10,197,257

**PETITION FOR *INTER PARTES* REVIEW OF
U.S. PATENT NO. 10,197,257**

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TABLE OF CONTENTS

TABLE OF AUTHORITIES	iii
LISTING OF EXHIBITS.....	iv
MANDATORY NOTICES.....	1
A. Real Party-in-Interest (37 C.F.R. § 42.8(b)(1)).....	1
B. Notice of Related Matters (37 C.F.R. § 42.8(b)(2))	1
C. Designation of Lead and Back-Up Counsel and Service Information (37 C.F.R. § 42.8(b)(3))	1
D. Designation of Lead and Back-Up Counsel and Service Information (37 C.F.R. § 42.8(b)(4))	2
I. INTRODUCTION	3
II. REQUIREMENTS FOR PETITION FOR <i>INTER PARTES</i> REVIEW.....	3
A. Grounds for Standing (37 C.F.R. § 42.104(a)).....	3
B. Payment of Fees (37 C.F.R. § 42.15(a)).....	3
C. Proof of Service (37 C.F.R. § 42.105).....	3
III. IDENTIFICATION OF CHALLENGED CLAIMS (37 C.F.R. § 42.104(b))	3
IV. SUMMARY OF THE '257 PATENT	4
V. Level of Ordinary Skill in the Art as of the Earliest Effective Filing Date of the '257 Patent	5
VI. CLAIM CONSTRUCTION	6
VII. DISCRETIONARY DENIAL WOULD BE INAPPROPRIATE.....	9
A. Discretionary Denial Under 35 U.S.C. § 325(d) is not Appropriate	9
VIII. THE CHALLENGED CLAIMS ARE UNPATENTABLE OVER MORGAN IN VIEW OF JULIO	11
A. Overview of Morgan	11
B. Overview of Julio	12

C.	A Skilled Artisan Would Have Been Motivated to Combine Julio with Morgan and Would Have Had a Reasonable Expectation of Success	13
D.	Ground 1: Morgan, in view of Julio, Renders Obvious Claims 1- 21	16
1.	Independent Claim 1	16
2.	Independent Claims 15 and 20	22
3.	Dependent Claim 2	25
4.	Dependent Claim 3	25
5.	Dependent Claim 4	26
6.	Dependent Claim 5	27
7.	Dependent Claim 6	28
8.	Dependent Claim 7	29
9.	Dependent Claim 8	31
10.	Dependent Claim 9	32
11.	Dependent Claim 10	33
12.	Dependent Claim 11	33
13.	Dependent Claim 12	35
14.	Dependent Claims 13 and 21	35
15.	Dependent Claim 14	39
16.	Dependent Claims 16-19	40
IX.	CONCLUSION	43

TABLE OF AUTHORITIES

	Page(s)
Cases	
<i>Commscope Tech. 's LLC v. Dali Wireless Inc.</i> , IPR2020-014731 (P.T.A.B. Mar. 12, 2021)	43
<i>Group III International, Inc. v. Targus Group International, Inc.</i> , IPR2021-00371(P.T.A.B. Jul. 9, 2021)	9
<i>Honeywell Int'l, Inc. v. ITT Indus., Inc.</i> , 452 F.3d 1312 (Fed. Cir. 2006).....	6
<i>In re Larson</i> , 340 F.2d 965 (C.C.P.A. 1965)	43
<i>Intel Corporation v. Koninklijke Philips N.V.</i> , IPR2021-00370 (P.T.A.B. Jul. 6, 2021)	9
<i>KSR Int'l Co. v. Teleflex, Inc.</i> , 550 U.S. 398 (2007)	14
<i>Personalized Media Commc'ns, LLC v. Apple Inc.</i> , 952 F.3d 1336 (Fed. Cir. 2020).....	6
<i>Phillips v. AWH Corp.</i> , 415 F.3d 1303 (Fed. Cir. 2005).....	6
<i>Realtime Data, LLC v. Iancu</i> , 912 F.3d 1368 (Fed. Cir. 2019).....	14
<i>Renishaw PLC v. Marposs Societa' per Azioni</i> , 158 F.3d 1243 (Fed. Cir. 1998).....	6
Statutes	
35 U.S.C. § 102	11, 12
35 U.S.C. § 103	4
35 U.S.C. § 325	9

LISTING OF EXHIBITS

Exhibit No.	Exhibit Description
1001	U.S. Patent No. 10,197,257 to Gammons <i>et al.</i> (“the ’257 Patent”)
1002	File History of the U.S. Patent No. 10,197,257 (“the File History”)
1003	Declaration of Fred Holmes (“Holmes Decl.”)
1004	Resume of Fred Holmes
1005	U.S. Patent No. 8,938,468 to Morgan <i>et al.</i> (“Morgan”)
1006	U.S. Publication No. 2010/0264852 to Julio (“Julio”)

MANDATORY NOTICES

Vitec Production Solutions, Inc. (“Petitioner”) hereby submits these
Mandatory Notices in accordance with 37 C.F.R. § 42.8 *et seq.*

A. Real Party-in-Interest (37 C.F.R. § 42.8(b)(1))

The real party-in-interest is Petitioner Vitec Production Solutions, Inc.,
located at Shelton, Connecticut, and The Vitec Group plc, located in the United
Kingdom.

B. Notice of Related Matters (37 C.F.R. § 42.8(b)(2))

The following currently pending matters relate to the challenged ’257
Patent: IPR2021–01496. Vitec is filing another *inter partes* review petition
against U.S. Patent No. 10,197,258 contemporaneously with this petition.¹ U.S.
Patent No. 10,197,258 claims priority to the same parent application as the ’257
Patent.

C. Designation of Lead and Back-Up Counsel and Service Information (37 C.F.R. § 42.8(b)(3))

Petitioner hereby identifies lead counsel as David M. Magee (Reg. No.
51,982), who can be reached at Armstrong Teasdale LLP, 800 Boylston St., 30th
Floor, Boston, Massachusetts 02199, via e-mail at dmagee@atllp.com, telephone at

¹ The following currently pending matters relate to the challenged ’258 Patent:

IPR2021-01497.

617.824.5131, and via fax at 617.830.8490. Backup counsel are: (1) Marc Vander Tuig (Reg. No. 57,964), who can be reached at Armstrong Teasdale LLP, 7700 Forsyth Blvd., Suite 1800, St. Louis, Missouri 63105, via email at mvandertuig@atllp.com, via telephone at 314.621.5070, and via fax at 314.621.5065; and (2) Dhruv Kaushal, Ph. D. (Reg. No. 67,340), who can be reached at Armstrong Teasdale LLP, 800 Boylston St., 30th Floor, Boston, Massachusetts 02199, via email at dkaushal@atllp.com, via telephone at 617.824.5150, and via fax at 617.830.8490. A Power of Attorney is filed concurrently herewith.

D. Designation of Lead and Back-Up Counsel and Service Information (37 C.F.R. § 42.8(b)(4))

Petitioner consents to electronic service to lead and backup counsel, using the email addresses above.

I. INTRODUCTION

Under 35 U.S.C. §§ 311–319 and 37 C.F.R. § 42.100 *et seq.*, Petitioner hereby requests *inter partes* review (“IPR”) of Claims 1–21 (“the challenged claims”) of U.S. Patent No. 10,197,257 (“the ’257 Patent”) (Ex. 1001).

II. REQUIREMENTS FOR PETITION FOR *INTER PARTES* REVIEW

A. Grounds for Standing (37 C.F.R. § 42.104(a))

Petitioner certifies that the ’257 Patent is available for *inter partes* review and that Petitioner is not barred or estopped from requesting *inter partes* review of the challenged claims of the ’257 Patent on ground identified herein.

B. Payment of Fees (37 C.F.R. § 42.15(a))

The required fees are submitted herewith. If additional fees are due during this proceeding, the Office is authorized to charge Deposit Account No. 012384.

C. Proof of Service (37 C.F.R. § 42.105)

Proof of service of this Petition on Rotolight Limited (“Patent Owner”) at the correspondence address of record for the ’257 Patent is attached hereto.

III. IDENTIFICATION OF CHALLENGED CLAIMS (37 C.F.R. § 42.104(b))

Petitioner respectfully requests *inter partes* review of Claims 1–21 of the ’257 Patent on the following ground and requests that each of the challenged claims be found unpatentable as set forth in greater detail in Section VIII, which indicates where each element can be found in the prior art, and the relevance of

that prior art. Additional evidence is set forth in the Declaration of Fred Holmes (Exhibit 1003).

Ground 1: Claims 1–21 are obvious over Morgan in view of Julio under 35 U.S.C. § 103.

IV. SUMMARY OF THE '257 PATENT

The '257 Patent was filed on November 22, 2017 and issued on February 5, 2019. It is a continuation of U.S. Application No. 15/481,160 (subsequently granted on as U.S. Patent No. 10,845,044) and claims priority to U.S. Provisional Application No. 62/319,809, filed on April 8, 2016. Accordingly, the earliest effective filing date of the '257 Patent is April 8, 2016. Therefore, the provisions of the AIA apply.

The '257 Patent, titled “Lighting system and Control Thereof” is directed to controlling a lighting system to produce user customizable lighting effects. Exhibit 1001 at Abstract. To produce a user customizable lighting effect, the '257 Patent discusses calculating a time varying lighting value based on at least one simulation parameter which characterizes the user’s desired lighting effect. *Id.*; *see also id.*, 7:13–20, 36–40. For example, to produce a fire effect, “[t]he user can select a fire activity . . . to set a frequency parameter” and other simulation parameters which determine additional aspects of the lighting effect (*i.e.*, color, brightness, duration). *Id.*, 8:17–21. The “frequency parameter,” characterizes a fire effect by “set[ting]

an average period between light peaks-e.g. a roaring fire may have a higher frequency than a single candle flame.” *Id.*, 6:55–58; *see also id.*, 8:15–19.

Additionally, the ’257 Patent states that the simulation parameters, which characterize a lighting effect, may be “random parameters and/or user-selectable parameters.” *Id.*, 7:27–29. However, the ’257 Patent makes clear that “for the purpose of the simulation[,] a pseudo-random parameter is sufficiently random for realistic simulation and is hence considered to be equivalent to a truly random parameter.” *Id.*, 7:30–34.

These simulation parameters are then used by an “effect simulator” to calculate data—the “time varying lighting values”—which is used to control the lighting system to produce the desired lighting effect. *Id.*, 7:25–44, 8:36–48; *see also id.*, Fig. 2 and 3a.

V. Level of Ordinary Skill in the Art as of the Earliest Effective Filing Date of the ’257 Patent

As of the earliest effective filing date claimed in ’257 Patent, a person of ordinary skill in the art with respect to the technology described in the ’257 Patent (“POSA”) would have had a Bachelor of Science degree in electrical engineering, or a closely related field, along at least two years of experience in the design of entertaining lighting systems, controls and effects. Exhibit 1003 (Holmes Decl.), ¶¶33–34. More education can supplement practical experience and vice versa. *Id.*

VI. CLAIM CONSTRUCTION

In an IPR, claims are interpreted under the *Phillips* standard. 37 C.F.R. § 42.100(b); *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc).

Under this standard, claim terms are given their plain meaning as understood by a person of ordinary skill in the art. *Id.*, 415 F.3d at 1312–13. However, in cases where a given claim term may be amenable to more than one construction, “the intrinsic evidence, including the claims themselves, the specification, and the prosecution history of the patent, [] is usually dispositive.” *Personalized Media Commc’ns, LLC v. Apple Inc.*, 952 F.3d 1336, 1340 (Fed. Cir. 2020). For example, “[w]here there are several common meanings for a claim term, the patent disclosure serves to point away from the improper meanings and toward the proper meanings.” *Renishaw PLC v. Marposs Societa’ per Azioni*, 158 F.3d 1243, 1250 (Fed. Cir. 1998). Further, where the patentee describes the invention in a particular way, as Patentee has done here, “[t]he public is entitled to take the patentee at his word.” *Honeywell Int’l, Inc. v. ITT Indus., Inc.*, 452 F.3d 1312, 1318 (Fed. Cir. 2006).

In the challenged claim, the terms “cinematic lighting special effect,” “effect simulator,” and “random” are used to define the alleged invention. Proposed constructions for these terms are presented below.

A. Cinematic Lighting Special Effect

The specification of the '257 patent does not include an express definition of a “cinematic lighting special effect,” but it does describe a preferred embodiment for a lighting system that includes “rolling shutter compensation.” Ex. 1001, 4:21–26. Additionally, the specification describes “strobe” and “lightning” special effects produced by the subject lighting systems in which “[a] user may rotate a knob on the device to adjust the ‘duty cycle’ (flash duration) to eliminate issues with rolling shutter cameras.” *Id.*, 9:21–26.

Viewed in light of this intrinsic evidence, the term “cinematic lighting special effect” is properly construed to refer to a lighting special effect that (a) does not cause a strobing effect when filmed with a rolling shutter camera and/or (b) is compatible with rolling shutter compensation, whereby a “minimum light pulse width [can] be adjusted to suit the shutter speed or frame rate of the user’s camera in order to prevent ‘strobing’ due to the light effect being out of phase/sync with the frame rate of the camera, ensuring that each frame captured by the camera is fully illuminated.” *Id.*, 4:21–26.

B. Effect Simulator

The terms “effect simulator” and “lighting effect simulator” are used interchangeably in the '257 Patent. The '257 Patent describes the “effect simulator” as follows: “lighting effect simulator 100 may be provided by way of a

suitably adapted computing device such as a PC, tablet, or smart phone, with suitable software for user input of simulation parameters,” and the “computing device may be a suitably adapted light controller device with suitable controls for user input of simulation parameters.” *Id.*, 11:43–58.

C. **Random**

With respect to “random,” the ’257 Patent clearly sets forth that “a pseudo-random parameter is sufficiently random for realistic simulation and is hence considered to be equivalent to a truly random parameter.” *Id.*, 7:30–34. Therefore, the ’257 Patent defines “random” as “either pseudo-random or truly random.” *Id.*

Petitioner submits that any phrases in the challenged claims that are not addressed above may be properly construed under the *Phillips* standard.

Petitioner’s positions herein are without prejudice to any other constructions Petitioner may advance in this or another administrative proceeding or before a district court. Petitioner reserves the right to respond to any claim construction issues proposed by Patent Owner or raised by the Board.

Petitioner reserves the right to respond to any claim construction issues proposed by Patent Owner or raised by the Board.

VII. DISCRETIONARY DENIAL WOULD BE INAPPROPRIATE

A. Discretionary Denial Under 35 U.S.C. § 325(d) is not Appropriate

Denial under § 325(d) is not warranted because the Grounds presented in this IPR are neither cumulative nor redundant of the grounds set forth during the prosecution of the '257 Patent. The Examiner did not consider any of the references relied upon in this petition. Although a publication related to the Morgan reference was cited on the face of the '275 Patent, it was not relied upon in a rejection or substantively discussed by the examiner during prosecution. No other reference presented in this petition was cited. The Board has found that where presented prior art references include references that were not before the examiner in combination with a reference that was not substantively considered by an examiner, such combinations are not the same or substantially the same art or arguments previously presented to the Office. *Group III International, Inc. v. Targus Group International, Inc.*, IPR2021–00371, No. 21 at 33 (P.T.A.B. Jul. 9, 2021); *see also Intel Corporation v. Koninklijke Philips N.V.*, IPR2021–00370, No. 10 at 9 (P.T.A.B. Jul. 6, 2021) (finding that the first condition of *Advanced Bionics* was not satisfied where a single reference had been cited on the face of the Challenged Patent while the other references were not before the examiner and declining to consider the material error condition of *Advanced Bionics*).

Moreover, the Ground in this IPR is non-cumulative because it relies on prior art that teach the specific limitations the Examiner found lacking in the prior art of record used during prosecution. For example, during examination, the claims of the '257 Patent were rejected in a single office action. The Examiner rejected the claims as anticipated by U.S. Patent Publication No. 2008/0129226, published on June 5, 2008 ("Dewitt"). The Applicant amended the independent Claims 1, 15, and 20 to purportedly clarify that "the simulation parameter(s) characterises a user customisable lighting effect selected from a range of different user customisable lighting effects for at least one of: videography, broadcasting, cinematography, studio filming, and location filming." Ex. 1002, July 10, 2018 Response, at 12. The Applicant argued that DeWitt taught a simulated "tea light" candle but did not imply that the lighting effect is "selected from a range of different user customisable lighting effects for at least one of: videography, broadcasting, cinematography, studio filming, or location filming" as amended. *Id.*

The claims of the '257 Patent were thereafter allowed. More specifically, in the Notice of Allowance, the Examiner indicated the claims were allowable because "[t]he prior [art] fails to teach or fairly suggest combination of elements recited in independent Claims 1, 15, and 20." *Id.*, September 26, 2018 Notice of Allowance, at 2–3. Critically, however, the Examiner did not mention or rely on Morgan's teachings of lighting effects and/or lighting shows that may be used for

“theatrical or other entertainment-based/special effects lighting[.]” Ex. 1005, 10:51–52.

VIII. THE CHALLENGED CLAIMS ARE UNPATENTABLE OVER MORGAN IN VIEW OF JULIO

A. Overview of Morgan

U.S. Patent No. 8,938,468 to Morgan *et al.* was filed on September 24, 2010, published on February 10, 2011, and issued as a patent on January 20, 2015. Accordingly, Morgan is available as prior art under 35 U.S.C. §§ 102(a)(1) and/or 102(a)(2).

Morgan is generally directed to “methods and apparatus for facilitating the process of designing, selecting, and/or customizing lighting effects or lighting shows.” Ex. 1005, 2:48–51. These lighting effects and/or lighting shows may be used for, but not limited to, “theatrical or other entertainment-based/special effects lighting[.]” *Id.*, 10:46–52. To facilitate the design, selection, and/or customization of lighting effects or lighting shows, for example, for example, Morgan discusses a controller which includes a user interface. *Id.*, 8:24–35, 10:13–21, 24:24–27.

Morgan also teaches that the “controller” includes software that enables a user to select a lighting effect from one or more predefined lighting effects and modify a selected lighting effect. *Id.*, 10:16–20, 26:8–17; *see also id.*, 2:64–3:3, 9:36–57. These lighting effects “may have one or more static and/or dynamic characteristics, and exemplary dynamic characteristics may relate to one or more

of color, brightness, perceived transition speed, perceived motion, periodicity, and the like.” *Id.*, 1:51–55; *see also id.*, 3:66–67, 4:11–15.

In turn, Morgan teaches that the light sources are controlled to generate the desired lighting effect based on control signs “(e.g. signals generated by executing a lighting program, one or more *outputs from a user interface*, etc.)[.]” *Id.*, 14:29–39 (emphasis added). Generating these control signals may be accomplished through “simulating the lighting effect” and/or “determin[ing] one or more characteristics of the lighting effect” by performing “any other suitable analysis algorithm.” *See id.*, 32:15–30.

Accordingly, Morgan’s teachings facilitate “the process of designing, selecting, and/or customizing lighting effects or lighting shows.” *Id.*, 2:48–51.

B. Overview of Julio

U.S. Publication No. 2010/0264852 to Julio (“Julio”) was filed on December 11, 2008 and was published on October 21, 2010. Accordingly, Julio is available as prior art under 35 U.S.C. §§ 102(a)(1) and/or 102(a)(2).

Julio is generally related to methods of “using an algorithm to generate themed lighting selections.” Ex. 1006, ¶[0002]. Julio teaches that the lighting selections generate “non-repetitive lighting sequences” and allows “user selection of various light fixture scene involvement regarding parameters such as fixture

installation or group, color/intensity range selection, fade timing delay selection, and dwell delay selection.” *Id.*, ¶[0009].

This is done by a control device, which allows a user to generate or control “specif[ic] themes, biasing, parameter limitations within a set theme, etc.” *Id.*, ¶[0048]. More specifically, Julio teaches that a “particular theme is defined by many parameters” wherein each “parameter defining a theme may have a range.” *Id.*, ¶[0050]. Further, a selection algorithm can facilitate the design of such themes. For example, Julio states that the selection algorithm “selects randomly within each range to generate the values for the lighting system.” *Id.*

Alternatively, Julio also provides that the selection algorithm “is biased to select some values with a greater or lesser rate than others” so that a user can “impose control over how values are selected while still allowing the random-selection mechanism to generate a wide variety of colors and other values.” *Id.*

Accordingly, Julio’s teachings facilitate a user’s ability to generate various non-repetitive lighting scenes. *See id.*, ¶[0009].

C. A Skilled Artisan Would Have Been Motivated to Combine Julio with Morgan and Would Have Had a Reasonable Expectation of Success

The Supreme Court held that a person of ordinary skill is “a person of creativity, not an automaton” and “in many cases a person of ordinary skill will be able to fit the teachings of multiple patents together like pieces of a puzzle.” *See*

KSR Int'l Co. v. Teleflex, Inc., 550 U.S. 398, 415–18 (2007) (rejecting the Federal Circuit’s “rigid” application of the teaching, suggestion, or motivation to combine test, instead espousing an “expansive and flexible” approach). “A motivation to combine may be found explicitly or implicitly in market forces; design incentives; the interrelated teachings of multiple patents; any need or problem known in the field of endeavor at the time of invention and addressed by the patent; and the background knowledge, creativity, and common sense of the person of ordinary skill.” *Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1374 (Fed. Cir. 2019).

In the instant case, a POSA would have considered the teachings of both Morgan, and Julio since they are analogous art in the same field of endeavor as the ’257 Patent—namely, the field of lighting systems and methods for producing lighting special effects which utilize a plurality of LEDs to generate different types of effects and colors. Ex. 1003, ¶¶61–63. The POSA would have been motivated to combine the teachings of Julio and Morgan insofar as they disclose related approaches for solving the problems that one of skill in the art would expect to encounter in the design and implementation of lighting systems and methods for producing such special effects. *Id.*, ¶64.

The POSA would also have had a reasonable expectation of successfully combining the elements of Morgan and Julio with one another, because the lighting systems in both references comprised “controllers,” “LEDs” and like elements that

were familiar to the POSA at the time of the alleged invention. *Id.*, ¶65. That is, the combinations of Morgan and Julio proposed herein are combinations of known techniques and/or substitutions of art-known elements to yield predictable results. *Id.*

Moreover, as provided by the Patentee of the '257 Patent at the time of the alleged invention, there was a desire to produce a lighting effect based on “random parameters . . . to introduce a realistic variance in the lighting effect.” Ex. 1001, 7:17–20; Ex. 1003, ¶66. Before the '257 Patent, Julio similarly discussed the need to “generate non-repetitive lighting sequences for themed lighting selections with lighting parameters controlled in a random manner” (Ex. 1006, ¶[0010]) to “generate animated scenes to fit a specified theme.” *Id.*, ¶[0017]. In addition, Morgan discusses the need to facilitate a user’s ability to design, select, and/or customize lighting effects to generate “aesthetically appealing results.” Ex. 1005, 9:15–19, 36–39.

In light of the foregoing, a POSA would have been motivated to combine Julio’s teachings regarding random parameters with Morgan to enable a user to generate perceived realism and aesthetically pleasing lighting effects. Ex. 1003, ¶68.

D. Ground 1: Morgan, in view of Julio, Renders Obvious Claims 1–21

1. Independent Claim 1

Morgan, in view of Julio, satisfies each and every element of Claim 1. A POSA would have been motivated to combine Julio with Morgan for at least the reasons discussed above and as set forth below. *See* Ex. 1003, ¶¶69–89.

Claim 1[p]: *A method for controlling a lighting device to produce a user customisable lighting effect, the method comprising:*

To the extent the preamble is limiting, Morgan discloses Claim 1[p], teaching “methods and apparatus for facilitating the process of designing, selecting, and/or customizing lighting effects or lighting shows.” Ex. 1005, 2:48–51; *see also* Ex. 1003, ¶¶69–70.

More specifically, “[o]ne or more lighting effects, or an entire lighting show, may be based on parameters that are definable by a designer/programmer, or based at least in part on predefined (‘pre-packaged’) lighting effects available for selection.” Ex. 1005, 1:63–2:6. Further, Morgan teaches a “lighting system may include a plurality of lighting units, and so the input information relates to a number of the lighting units, respective types of the lighting units, and/or a physical arrangement of the lighting units in an environment in which the at least one lighting effect is to be generated.” *Id.*, 3:37–42.

Morgan also teaches a lighting unit having “one or more user interfaces . . . to facilitate any of a number of user-selectable settings or functions (e.g., generally

controlling the light output of the lighting unit 100, changing and/or selecting various pre-programmed lighting effects to be generated by the lighting unit, changing and/or selecting various parameters of selected lighting effects.” *Id.*, 14:4–12.

Julio also teaches a method for user “selection of lighting parameters (Ex. 1006, ¶ [0011]), to “generate themed lighting selections” (*id.*, ¶ [0002]) by controlling one or more lighting fixtures (*see id.*, ¶ [0047]).

Claim 1[a]: *calculating, using an effect simulator, a time varying lighting value based on at least one simulation parameter;*

Morgan discloses Claim 1[a]. Ex. 1003, ¶¶71–75. Morgan teaches that “one or more of the library of lighting effects/shows” and “one or more (or all) functional aspects of a user interface ... and library searching may be performed by a controller that also controls the lighting system that generates the lighting effect(s)/show(s).” Ex. 1005, 10:16–21. This satisfies the functionality of the “effect simulator” of the ’257 Patent. Ex. 1003, ¶72.

Further, according to Morgan, the “user may select one or more of the candidate lighting effects.” Ex. 1005, 25:31–39. Thus, the selected effect(s) are “processed by the central controller” to “control the lighting system accordingly.” *Id.*, 25:39–50.

Controlling the lighting system, as contemplated by Morgan, represents “a time varying lighting value based” as claimed by the ’257 Patent. Ex. 1003, ¶73.

The lighting effects of Morgan “may have one or more static and/or dynamic characteristics, and exemplary dynamic characteristics may relate to one or more of color, brightness, perceived transition speed, perceived motion, periodicity, and the like.” Ex. 1005, 1:51–55, 3:57–4:15.

In addition, Morgan teaches that a lighting effect may be encoded as “a sequential list of lighting states and transitions between lighting states, or frames of color data with reference to some time base, to provide a lighting program that may be executed by the central controller 202 to generate lighting commands.” *Id.* 22:12–18.

Claim 1[b]: *wherein said at least one simulation parameter characterises a user customisable lighting effect selected from a range of different user customisable lighting effects for at least one of: videography, broadcasting, cinematography, studio filming, and location filming;*

Morgan also teaches the structural and functional elements required by Claim 1[b], including the “controller” and “lighting effects” that are “user customizable.” Ex. 1003, ¶¶76–80. For example, Morgan teaches that “one or more candidate lighting effects may . . . [be] processed by the central controller” to “control the lighting system accordingly.” Ex. 1005, 25:39–50.

Turning first to the requirement for effects “for at least one of: videography, broadcasting, cinematography, studio filming, and location filming,” Morgan teaches that lighting units “may be employed in a variety of applications including, but not limited to . . . theatrical or other entertainment-based/special effects

lighting.” *Id.*, 10:46–58. The POSA would have understood these “theatrical or entertainment-based/special effects” to include the same applications contemplated by the ’257 Patent—namely, special effects for videography, broadcasting, cinematography, studio filming, or location filming. Ex. 1003, ¶77. The POSA would also recognize that Morgan’s disclosure encompasses cinematography, videography, and similar applications based on its discussion of pulse duration control. *Id.*; Ex. 1005, 12:18–28, 12:14–35.

A POSA would recognize the need for rolling shutter compensation for preventing unwanted flicker, or other artifacts, and would have known that pulse duration control, or dwell control, is commonly used to resolve this issue. Ex. 1003, ¶78.

With respect to the remaining limitations, Morgan teaches that the “user may select one or more of the candidate lighting effects.” Ex. 1005, 25:31–39. Morgan further discloses that the lighting unit may include a controller “configured to output one or more control signals to drive the light sources[.]” *Id.*, 1:22–25, 13:15–21.

Claim 1[c]: *wherein said at least one simulation parameter is at least one of: a random brightness; a random duration; and a random interval;*

Morgan, in view of Julio, teaches Claim 1[c]. Ex. 1003, ¶¶80–85. Morgan teaches that the lighting effects “may have one or more static and/or dynamic characteristics, and exemplary dynamic characteristics may relate to one or more

of color, *brightness*, *perceived transition speed*, perceived motion, *periodicity*, and the like.” Ex., 1005, 1:51–55 (emphases added), 3:57–4:15. However, Morgan does not explicitly disclose that these characteristics are “random.”

Julio, in a similar field, teaches methods relating to “themed lighting selections” that are “defined by many parameters” including “color selection,” “intensity selection,” “fade delay”—the time taken “to fade from [a] current color/intensity to the next selected color/intensity;” and “dwell delay”—“a period of time to leave a particular selection of colors and intensities in a static situation before selecting a new set of values.” *Id.*, ¶¶[0051]–[0056]; *see also id.*, ¶¶[0010], [0015], [0117]. A POSA would have understood “intensity selection” to satisfy the brightness requirement, while “fade delay” is defined in Julio as the time taken “to fade from [a] current color/intensity to the next selected color/intensity”, and “dwell delay” as “a period of time to leave a particular selection of colors and intensities in a static situation before selecting a new series of values.” Ex. 1003, ¶83.

Julio further teaches that random numbers can be used for these parameters, which will cause a theme or effect to “appear to be ever-changing with no repetition.” Ex. 1006, ¶[0041]; *see also id.*, ¶[0010]. A POSA would recognize that combining Morgan with the teachings of Julio’s random parametric values would produce predictable results, as it would have been well within the skill of the POSA

to specify random or pseudorandom values for parameters in programming a particular lighting effect. Ex. 1003, ¶85. The incorporation of random values in place of set values would create realistic and, as sought by Morgan, aesthetically pleasing lighting effects. *Id.*

Claim 1[d]: *said simulation parameter depending on the user customisable lighting effect being simulated; and*

Morgan discloses Claim 1[d]. Ex. 1003, ¶¶87–89. Morgan teaches that lighting effects controlled “may have one or more static and/or dynamic characteristics, and exemplary dynamic characteristics may relate to one or more of color, brightness, perceived transition speed, perceived motion, periodicity, and the like.” Ex. 1005, 1:51–55, 3:57–4:15.

Morgan also teaches that the one or more characteristics of the lighting effect include, but are not limited to, “color content,” “color resolution,” “color distribution or color spatial frequency,” and/or “at least one dynamic temporal characteristic” of the selected lighting effect. *Id.*, 3:57–4:15. Moreover, Morgan discloses that a user can “chang[e] and/or select[] various *parameters of selected lighting effects.*” *Id.*, 14:4–12 (emphasis added).

Julio also teaches that a “particular theme is defined by many parameters itself” and “[e]ach parameter defining a theme may have a range” (Ex. 1006, ¶[0050]), and a user can provide “range selection of lighting parameters *within a selected theme.*” *Id.*, ¶[0011] (emphasis added).

Claim 1[e]: *outputting, from said effect simulator, said time varying lighting value thereby to simulate the user customisable lighting effect.*

As noted above with respect to Claim 1[a], Morgan teaches that an executable lighting program—which satisfies the claimed “time varying lighting value.” Ex. 1003, ¶90. This lighting program may be executed in either an operational or simulated setting:

For example, a component of the lighting system 200 or of the external storage facility 214A/214B may generate the lighting effect using the executable lighting program and may monitor the generated illumination to determine one or more characteristics of the lighting effect, *or the component may simulate the lighting effect in any suitable manner and monitor illumination generated in the simulation.*

Ex. 1005, 32:14–21 (emphasis added).

In view of the above, Morgan further teaches that the controller is “particularly configured to provide control signals to one or more of the light sources so as to generate” lighting effects. *Id.*, 13:10–14. In addition, it would be obvious to the POSA that the outputs of the controller of Morgan could be used for either operational or simulation purposes. Ex. 1003, ¶92.

2. Independent Claims 15 and 20

For this Petition, there are no substantive differences between Claim 1 and Claims 15 and 20. Therefore, Morgan in view of Julio renders Claims 15 and 20

obvious for the same reasons as discussed above for Claim 1. *See supra* Section VIII.E1; *see also* Ex. 1003, ¶¶91–94.

A comparison of each limitation for Claims 1, 15, and 20 is as follows, with differences shown in red:

Claim 1	Claim 15	Claim 20
1[p] A method for controlling a lighting device to produce a user customisable lighting effect, the method comprising:	15[p] A controller adapted to control[] at least one lighting device to produce a user customisable lighting effect, the controller comprising:	20[p] A computer program comprising software code for controlling a lighting device to produce a user customisable lighting effect, the computer program adapted to perform, when executed, the steps of:
1[a] calculating, using an effect simulator, a time varying lighting value based on at least one simulation parameter;	15[a] an effect simulator adapted to calculate a time varying lighting value based on at least one simulation parameter;	20[a] calculating using an effect simulator a time varying lighting value based on at least one simulation parameter;
1[b] wherein said at least one simulation parameter characterises a user customisable lighting effect selected from a range of different user customisable lighting effects for at least one of: videography, broadcasting, cinematography, studio filming, and location filming;	15[b] wherein said at least one simulation parameter characterises a user customisable lighting effect selected from a range of different user customisable lighting effects for at least one of: videography, broadcasting, cinematography, studio filming, and location filming;	20[b] wherein said at least one simulation parameter for characterises a user customisable lighting effect selected from a range of different user customisable lighting effects for at least one of: videography, broadcasting, cinematography, studio filming, and location filming;

1[c] wherein said at least one simulation parameter is at least one of: a random brightness; a random duration; and a random interval;	15[c] wherein the at least one simulation parameter is at least one of: a random brightness; a random duration; and a random interval;	20[c] wherein the at least one simulation parameter is at least one of: a random brightness; a random duration; and a random interval;
1[d] said simulation parameter depending on the user customisable lighting effect being simulated; and	15[d] said simulation parameter depending on the user customisable lighting effect being simulated; and	20[d] said simulation parameter depending on the user customisable lighting effect being simulated; and
1[e] outputting, from said effect simulator, said time varying lighting value thereby to simulate the user customisable lighting effect.	15[e] wherein an output[] of the effect simulator is adapted to control a lighting device according to the calculated variation of lighting over time.	20[e] outputting, from said effect simulator, said time varying lighting value thereby to simulate the user customisable lighting effect.

These claims primarily differ in their preambles: Claim 1 is directed to a “method” for controlling a lighting device, whereas Claims 15 and 20 are directed to a “controller” and “computer program” that perform the method of Claim 1, respectively. Ex. 1003, ¶93. The body of each claim is substantively the same, with the exception that the methodological step of “outputting” a time varying lighting value in claims 1 and 20 is replaced by a functional requirement that the output “is adapted to control a lighting device” in Claim 15. *Id.*, ¶94. This altered wording, however, does not represent a material change in the scope of the claims, as a “time varying lighting value” that could be used to “simulate” a lighting effect would be “adapted to control a lighting device.” *Id.*

3. Dependent Claim 2

Claim 2 depends from Claim 1 and further recites that “the random brightness comprises a random peak brightness.” As noted above with respect to claim element 1[c], Morgan includes brightness parameter as a dynamic temporal characteristic of intensity. Ex., 1005, 1:51–55.

Julio also discloses a random brightness parameter where “[g]iven a list of intensity selection ranges the algorithm can select specific, randomly chosen intensity values.” Ex. 1006, ¶[0054]. Therefore, by selecting randomly chosen intensity values, at least one value will be greater than the others. Ex. 1003, ¶97. A POSA would have understood this to include a random peak brightness. *Id.*, ¶98.

4. Dependent Claim 3

Claim 3 depends from Claim 1 and further recites that “the random interval comprises at least one of a random interval between flashes, a random interval between groups of flashes, and a random frequency.”

Morgan teaches strobe effects (“flashes”). Ex. 1005, 26:55–61. Morgan also teaches parameters such as “perceived transition speed, perceived motion, periodicity, and the like.” *Id.*, 1:51–55. However, Morgan does not explicitly teach a random interval between flashes or between groups of flashes, or random frequency of flashes.

Julio teaches a random “dwell delay selection” parameter which is “a period of time to leave a particular selection of colors and intensities in a static situation before selecting a new set of values.” Ex. 1006, ¶[0056]. Therefore, a POSA would appreciate that defining random static and transitional periods satisfies the claimed “random frequency.” Ex. 1003, ¶100. Julio consequently teaches the elements required by Claim 3. *Id.*

5. Dependent Claim 4

Claim 4 depends from Claim 1 and further recites that “the random duration comprises at least one of a random ramp-up time to peak brightness, a random fade-down time from peak brightness, and a random number of pulses.”

As noted above Morgan, in view of Julio, teaches Claim 1. *See* discussion *supra* Claim 1. Morgan discloses parameters such as “perceived transition speed, perceived motion, periodicity, and the like.” Ex. 1005, 1:51–55.

Julio further teaches a random “fade delay selection” parameter causes selected light fixtures to “fade from their current color/intensity to the next color/intensity.” Ex. 1006, ¶[0055]. While the concept is expressed in terms of fading from one color to another, the skilled POSA would appreciate that color intensity represents the brightness of LEDs corresponding to that color, and that a fade between colors inherently entails a “ramp down” of the brightness of the first color and/or a “ramp up” of the brightness of the second color. *See* Ex. 1003.

¶105. A POSA would have recognized that the random “fade delay selection” parameter taught by Julio as satisfying the random fade-down and/or ramp-up time as requirement of Claim 4. *Id.*, ¶104.

6. Dependent Claim 5

Claim 5 depends from Claim 1 and further recites that “said at least one simulation parameter is random within predefined boundaries and wherein the predefined boundaries comprise at least one of an upper and lower duration; a number of flashes in a burst; an interval between bursts; an amplitude; and a ramp-up or fade-down time.”

As noted above, Morgan and Julio teach the at least one simulation parameter. *See* discussion *supra* Claim 1. Further, Morgan teaches that the user selectable lighting effects “may have one or more static and/or dynamic characteristics” such as “perceived transition speed, perceived motion, periodicity, and the like.” Ex. 1005, 1:51–55. But Morgan does not explicitly state the simulation is random within a predefined boundary.

Julio teaches, for example, that “[e]ach parameter defining a theme may have a range,” where an algorithm may “select[] randomly within each range to generate the values for the lighting system.” Ex. 1006, ¶[0050]. Julio further teaches random “fade delay selection”—*i.e.* ramp-up or fade-down times, and “dwell delay selection”—*i.e.* duration or interval between

bursts. *Id.*, ¶[0056]. In addition, Julio similarly teaches an “intensity selection” parameter which may be a randomly chosen intensity value. *Id.*, ¶[0054]. A POSA would have understood that the “intensity selection” parameter of Julio to satisfy the “amplitude” requirement of Claim 5. Ex. 1003, ¶¶105–108.

7. Dependent Claim 6

Claim 6 depends from Claim 1 and further recites that “the at least one of: a random brightness; a random duration; and a random interval is determined in dependence on one or more user-selectable simulation parameters.”

Morgan teaches that lighting effects controlled “may have one or more static and/or dynamic characteristics, and exemplary dynamic characteristics may relate to one or more of color, brightness, perceived transition speed, perceived motion, periodicity, and the like.” Ex. 1005, 1:51–55. Morgan also teaches that the one or more characteristics of the lighting effect include, but are not limited to, “color content,” “color resolution,” “color distribution or color spatial frequency,” and/or “at least one dynamic temporal characteristic” of the selected lighting effect. *Id.*, 3:57–4:15. Moreover, Morgan discloses that a user can “chang[e] and/or select[] various *parameters of selected lighting effects*.” *Id.*, 14:4–12 (emphasis added). However, Morgan does not teach random parameters in dependence on one or more user-selectable simulation parameters.

Julio teaches a process for generating a lighting effect whereby color and intensity values are randomly selected from a defined range based, in part, on a user-selectable “biasing parameter.” Ex. 1006, ¶¶[0050], [0122]. The biasing parameter weights specific values or sub-ranges within the broader range from which the lighting values are randomly selected. *Id.*, ¶[0050].

Julio also teaches that a “particular theme is defined by many parameters itself” and “[e]ach parameter defining a theme may have a range” (*Id.*, 1006, ¶[0050]), wherein a user can provide “range selection of lighting parameters *within a selected theme.*” *Id.*, ¶[0011] (emphasis added). Importantly, Julio further teaches that the “ranges can also be associated so that certain parameter selections will be made in conjunction with other parameter selections,” where, for example, “certain color selections may only be made with certain intensity selections.” *Id.*, ¶[0057]. Julio then discloses that an algorithm may “select[] randomly within each range to generate the values for the lighting system.” *Id.*, ¶[0050]. Therefore, depending on a user selected color, only certain intensity (brightness) parameters may be randomly chosen. Ex. 1003, ¶¶109–113.

8. Dependent Claim 7

Claim 7 depends from Claim 1 and further recites that “the simulation parameter is related to one or more of: a rate of increase of brightness; a rate of decrease of brightness; a rate of change of colour; a brightness; a local maximal

brightness; a local minimal brightness; a brightness fluctuation period; and a colour fluctuation period.”

As noted above, Morgan teaches that lighting effects controlled “may have one or more static and/or dynamic characteristics, and exemplary dynamic characteristics may relate to one or more of color, brightness, perceived transition speed, perceived motion, periodicity, and the like.” Ex. 1005, 1:51–55; *see also id.*, 3:57–4:15. Morgan also teaches that the one or more characteristics of the lighting effect include, but are not limited to, “color content,” “color resolution,” “color distribution or color spatial frequency,” and/or “at least one dynamic temporal characteristic” of the selected lighting effect. *Id.*, 3:57–4:15. Where a dynamic temporal characteristic may include “how much and/or how fast the lighting effect should change.” *Id.*, 30:49–51.

Julio similarly teaches a “fade delay selection” parameter which is the time “to be implemented by the selected light fixtures to fade from their current color/intensity to the next color/intensity.” Ex. 1006, ¶[0055]. The POSA would readily appreciate that this fade delay is “related to” a rate of decrease of brightness and/or a rate of change of colour. Ex. 1003, ¶116. Similarly, the “dwell delay selection” parameter of Julio, which is “a period of time to leave a particular selection of colors and intensities in a static situation before selecting a new set of values” (Ex. 1006, ¶[0056]) would be understood by the POSA as “related to” both

a brightness fluctuation period and a color fluctuation period. Ex. 1003, ¶¶114-117.

9. Dependent Claim 8

Claim 8 depends from Claim 1 and further recites that “receiving a user input of one or more user-selectable simulation parameters and adapting the simulation in dependence on the one or more user-selectable simulation parameters.”

Morgan teaches that a lighting system “may be configured to respond to [the] operation of the user interface[.]” Ex. 1005, 14:19–23. More specifically, for example, Morgan discloses that a user of the lighting system may send instructions and/or information to a controller “via [a] local user interface” regarding the “desired lighting effect or show[.]” *Id.*, 23:52–24:4. It is through this user interface (“input interface”) that a user may then “change one of the colors produced by the lighting effect/show, change a reproduction speed for the lighting effect, or change any other characteristic of the lighting effect.” *Id.*, 26:14–17; *see also id.*, 14:4–12.

Additionally, Morgan teaches the characteristics of a lighting system may be entered into “a two-dimensional or three-dimensional computer-simulated lighting environment,” by “placing icons for a lighting unit into a simulated environment and entering the simulation properties of the lighting unit. *Id.*, 27:56–28:2. It

would be evident to the POSA that the simulated output would be “adapted” based on the information entered by the user, as required by Claim 8. Ex. 1003, ¶120. More generally, 2- and 3-dimensional lighting simulations (which may also be referred to in the art as “visualizers”) were widely used in the art from at least 2009, and it would have been readily evident to the POSA that a simulation would be designed to accept user inputs of simulation parameters and would adapt the simulated output in accordance with the user inputs. *Id.*

10. Dependent Claim 9

Claim 9 depends from Claim 1 and further recites that “the simulation parameter comprises at least one of: a maximum brightness; a minimum brightness; a colour; and a trigger.”

As discussed, Morgan teaches the characteristics of a lighting effect may include, but are not limited to, “color [and] brightness.” Ex. 1005, 1:53–55. In addition, Morgan further teaches that a lighting effect characteristic may include “desired dynamicity [] (i.e., “how much and/or how fast the lighting effect should change . . . and/or an occasion or event for which the lighting effect is going to be generated.” *Id.*, 30:45–61. A POSA would have also understood that Morgan’s disclosure of an “occasion or event for which the lighting effect is going to be generated” satisfies the “trigger” requirement of Claim 9. Ex. 1003, ¶122.

Julio expressly discloses “intensity” and “color” parameters. Ex. 1006, ¶¶[0053]–[0054]. Where the “intensity” parameter may include “a list of intensity selection ranges.” *Id.*, ¶[0054]. Julio discloses that an algorithm may “select[] randomly within each range to generate the values for the lighting system.” *Id.*, ¶[0050]. A POSA would have understood that a “list of intensity selection ranges” would inherently include a maximum and minimum brightness. Ex. 1003, ¶123.

11. Dependent Claim 10

Claim 10 depends from Claim 1 and further recites that “the simulation iterates through repeated cycles of calculating a time varying lighting value based on at least one random simulation parameter and simulating the user customisable lighting effect.”

Julio teaches Claim 10. Ex. 1003, ¶124. As discussed above, Morgan in view of Julio teaches Claim 1. *See* discussion *supra* Claim 1. Additionally, Julio further teaches steps for generating a theme where values of “a set of allowable colors and intensities,” “a fade time,” and “a dwell time,” may be randomly chosen and where the steps of randomly choosing those values are repeated for “a desired number of times.” Ex. 1006, ¶¶[0171]–[0184].

12. Dependent Claim 11

Claim 11 depends from Claim 1 and further recites that “the user customisable lighting effect is designed to mimic at least one of fire flickering;

police light; television; lightning flashing; electrical sparking; fireworks; a neon flickering sign; a gunshot; welding; a scan; a propeller; a (nuclear) explosion; a wormhole; paparazzi flashes; flashes (strobe).”

As discussed above, Morgan in view of Julio teaches Claim 1. See discussion *supra* Claim 1. Morgan further teaches that the user customizable lighting effects may mimic at least moving light sources (Ex. 1005, 4:11–15), fireworks effects (*Id.*, 31:1–2), and a strobe effect (*Id.*, 26:59–60). With Morgan’s teachings of fireworks, adjusted for brightness, a user could create an effect mimicking an explosion. Ex. 1003, ¶126. Additionally, Morgan’s teachings of generating sequences and patterns that mimic a moving light source may also be used to generate scanning effects. *Id.*

Julio also teaches steps for generating a theme where values of “a set of allowable colors and intensities,” “a fade time,” and “a dwell time,” may be randomly chosen. Ex. 1006, ¶[0117]; *see also id.*, ¶¶[0052]–[0056]. Adding the random parameters of Julio to Morgan’s teaching of a strobing effect, a POSA would have understood that a user could also simulate lightning flashes or paparazzi flashes by adjusting the intensity of a strobe while introducing randomness in the duration of the flash or interval between flashes. Ex. 1003, ¶128. Similarly, a user could create an effect mimicking electrical sparking or neon flickering by introducing irregular timing of a strobe effect with a color

adjustment. *Id.* For example, a blue color can be used for an electrical spark or a color may be chosen to correlate to the color of a neon sign that is flickering. *Id.*

13. Dependent Claim 12

Claim 12 depends from Claim 1 and further recites that “selecting a definition of a trigger event, said trigger event initiating said output of the time varying lighting value thereby to simulate the user customisable lighting effect.”

Morgan discloses Claim 12. Ex. 1003, ¶129. As discussed above, Morgan in view of Julio teaches Claim 1. *See* discussion *supra* Claim 1. In addition, Morgan further teaches “a time at which the lighting effects is to be generated” or an occasion or event for which the lighting effect is going to be generated.” Ex. 1005, 30:57–65. More specifically, for example, this includes “day/night, winter/summer, etc.,[] and/or . . . a holiday.” *Id.*

A POSA, in view of Morgan’s teaching regarding user customization, would this disclosure as satisfying the “trigger” requirements of Claim 12. Ex. 1003, ¶129

14. Dependent Claims 13 and 21

Claim 13: *The method according to claim 1, further comprising storing the at least one simulation parameter corresponding to said user customisable lighting effect.*

Morgan discloses Claim 13. Ex. 1003, ¶¶130–132. With respect to the at least one simulation parameter, Morgan discloses that the controller “may locally

store lighting effects” and that those stored “lighting effects may be modified versions of existing effects retrieved from the library.” Ex. 1005, 24:4–9. Indeed, Morgan discloses that “lighting effects . . . may be based on parameters that are . . . based at least in part on predefined (“pre-packaged”) lighting effects available for selection.” *Id.*, 1:61–67.

As a further example, Morgan discusses that user may “chang[e] . . . various parameters of the selected lighting effect[.]” *Id.*, 14:9–10. And “once an executable lighting program for a lighting effect has been received and/or modified by a user, then the central controller 202 may transmit the executable lighting program to a data store associated with the central controller[.]” *Id.*, 26:26–33.

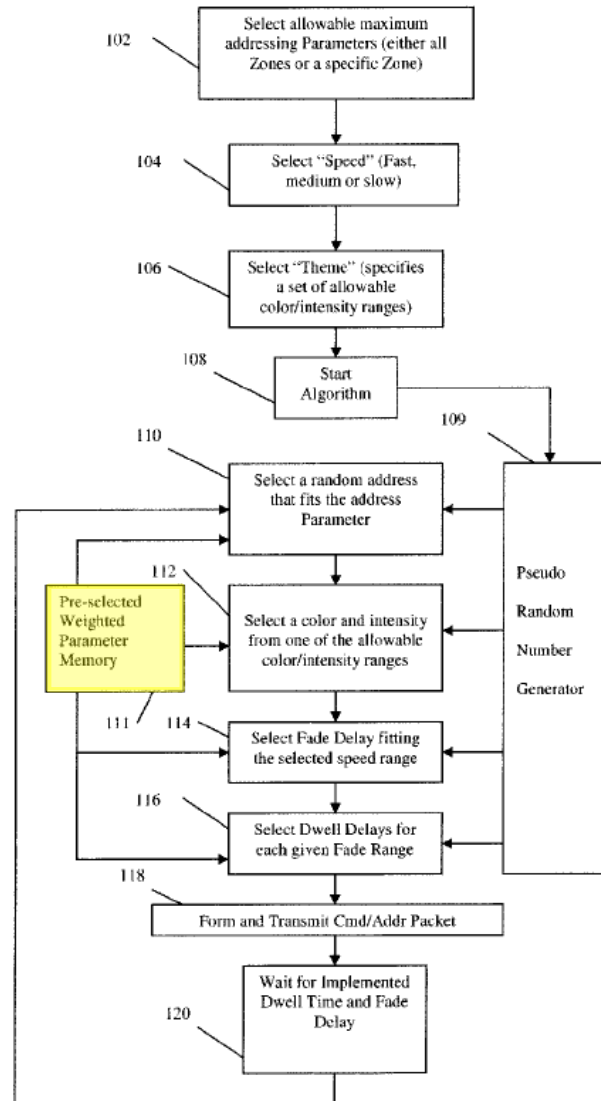
In addition, Julio teaches that selected parameters regarding “color/intensity,” “fade delay,” and “dwell delay,” and their respective “weights” may “be placed into memory and when the algorithm would start it would randomly control stage 5000 to the selected parameters.” See Ex. 1006, ¶¶[0141]–[0156].

Claim 21: *The method according to claim 13, further comprising recalling said stored at least one simulation parameter from a memory.*

Morgan discloses Claim 21. Ex. 1003, ¶¶133–135. Claim 21, which depends from Claim 13, further requires “recalling said stored at least one simulation parameter from a memory.”

Morgan teaches a “processor 102 may be configured to respond by selecting one or more pre-programmed control signals stored in memory, modifying control signals generated by executing a lighting program.” *See* Ex. 1005, 14:23–56. Further, Morgan additionally discloses once aspects of effects, such as parameters, are stored, they may then be transmitted to the “controller 202 at any time for execution[.]” *Id.*, 22:42–46.

Moreover, Julio also teaches that selected “color/intensity, fade delay, and dwell delay [are] assigned aforementioned pre-selected weighting parameters *from a pre-selected weighting parameter memory 111.*” Ex. 1006, ¶[0119]; *see also id.*, Fig. 2 (reproduced below with annotations).



A POSA would understand that the effects with adjusted parameters are stored to, and recalled from, a “memory.” Both Morgan and Julio teach that stored effects, and their respective parameters would be contained in memory as computer-readable instructions that can be recalled and implemented later. Ex. 1003, ¶135.

15. Dependent Claim 14

Claim 14 depends from Claim 1 and further recites that “controlling a plurality of lights in dependence on the output.”

Morgan and Julio disclose Claim 14. Ex. 1003, ¶¶136–148. Morgan discloses that the controller “receive[s] instructions (e.g., “lighting commands”) from a variety of origins, such as a user interface 118[.]” Ex. 1005, 12:40–43. Morgan additionally discloses that the controller can also be “configured to generate lighting commands for execution by one *or more lighting unit.*” *Id.*, 2:14–22 (emphasis added).

Moreover, Morgan discloses that “the lighting unit 100 may include one or more communication ports 120 to facilitate coupling of the lighting unit 100 to any of a variety of other devices, including one or more other lighting units.” *Id.*, 15:35–38; *see also id.*, 7:57–60 (explaining a controller associated with a lighting unit (“lighting device”) may “serve as a controller for one or more other [lighting] devices.”).

In addition, Julio teaches that the lighting system is enabled to “control[] millions of light fixtures. Ex. 1006, ¶[0026]. For example, Julio discusses that when a user is “[g]iven access to a list of all available light fixtures and different light fixtures configurations available (e.g. zones, groups and light units),” a user

can select “a single light fixture, a group of light fixtures, an entire zone of light fixtures or all light possible light fixtures.” *Id.*, ¶[0052].

16. Dependent Claims 16–19

Claims 16–19 directly, or indirectly, depend on independent Claim 15. As noted above with respect to Claim 15, Morgan, in view of Julio, renders obvious Claim 15. *See* discussion *supra* Claim 15; *see also* Ex. 1003, ¶¶139–146.

Claim 16: *The controller according to claim 15, wherein the controller comprises a wired or wireless communication interface adapted for communication with one or more lighting devices.*

Morgan anticipates Claim 16. Ex. 1003, ¶¶139–140. Morgan includes a further lighting device being separate from the controller and where the controller controls the further lighting device through a communications port. *See* discussion *supra* Claim 14; *see also* Ex. 1005, 2:19–22 (stating the controller can also be “configured to generate lighting commands for execution by one or more lighting unit.”). In addition, Morgan teaches that the communication ports “may also be adapted to receive and/or transmit data through wired or *wireless transmission*.” Ex. 1005, 15:44–46 (emphasis added).

Moreover, Julio similarly teaches “a central remote control device sending control signals via packets to remote light controllers . . . over wireless link WL[.]” Ex. 1006, ¶[0130].

Claim 17: *The controller according to claim 15, wherein the controller comprises an input interface adapted to receive a user input.*

Morgan and Julio disclose Claim 17. Ex. 1003, ¶¶141–143. Morgan teaches that the controller includes a user interface (see Ex. 1005, Fig. 1) and that controller “may be configured to respond to [the] operation of the user interface.” *Id.*, 14:19–23. More specifically, for example, Morgan discloses that a user of the lighting system may send instructions and/or information to the controller “via [a] local user interface,” regarding “a desired lighting effect or show[.]” *Id.*, 23:52–24:4.

It is through this user interface (“input interface”) that a “user may select one or of the candidate lighting effects” (*id.*, 25:28–39) and then “change one of the colors produced by the lighting effect/show, change a reproduction speed for the lighting effect, or change any other characteristic of the lighting effect.” *Id.*, 26:14–17; see also *id.*, 14:4–12.

Likewise, Julio teaches “a handheld remote” or “personal computer” that would “[f]or example, [allow] the user [to] check click-boxes next to each zone in a list to indicate what lights they want controlled by the algorithm.” Ex. 1006, ¶[0047]; see also *id.*, ¶[0042] (noting “controls can be implemented with selection described by way of example using select buttons.”).

Claim 18: *A lighting system comprising the controller according to claim 15 and at least one lighting device; said lighting device comprising at least one light emitting diode.*

Morgan and/or Julio disclose Claim 18. Ex. 1003, ¶¶144–145. As noted above with respect to claim element 1[a], Morgan discloses a “lighting unit” which is “an apparatus *including one or more light sources* of same or different types.” Ex. 1005, 6:57–59 (emphasis added). Morgan also defines a “light source” to include, without limitation, “LED-based sources” that “include[e] one or more LEDs.” *Id.*, 5:43–46.

Similarly, Julio also teaches using “color-capable lighting system (for example, LEDs) to generate animated scenes to fit a particular envisioned theme via defining parameters such as light fixture selection, color selection, color ranges, intensity, fade delay, and dwell delay.” Ex. 1006, ¶[0002].

Claim 19: *The lighting system according to claim 18 wherein said controller and said lighting device are integrated in a combined unit.*

Morgan discloses Claim 19. Ex. 1003, ¶146. Morgan expressly indicates that the “lighting unit 100 also includes a controller.” Ex. 1005, 11:22-23 (citing Fig. 1). Morgan also teaches that a lighting unit “may be associated with (e.g., include, be coupled to and/or packaged together with) various other components (e.g., control circuitry) relating to the operation of the light source(s).” *Id.*, 19:63-67. Therefore, in view of Morgan’s teachings, packaging the controller and lighting device components together in a combined unit would have been an

obvious design choice for the POSA and doing so would not have posed any difficulties. Ex. 1003, 148.

Indeed, similar combinations of known elements or components into an integrated whole have been held to be obvious. *Commscope Tech.'s LLC v. Dali Wireless Inc.*, No. IPR2020-014731, 2021 WL 952424, at *14 (P.T.A.B. Mar. 12, 2021) (“[U]se of a one piece construction instead of the structure disclosed in [the prior art] would be merely a matter of obvious engineering choice.” (quoting *In re Larson*, 340 F.2d 965, 968 (C.C.P.A. 1965))).

IX. CONCLUSION

The prior art demonstrates that the challenged claims are directed to well-known lighting systems capable of producing user customizable lighting effects that pre-date the '257 Patent by years. Therefore, under 35 U.S.C. § 314(a), there is a reasonable likelihood that these claims are unpatentable based on the ground presented in this petition. Petitioner respectfully requests that the Board institute trial and cancel Claims 1–21 as unpatentable in light of the prior art.

Dated: December 3, 2021

Respectfully submitted,

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CERTIFICATE OF SERVICE

Under 37 C.F.R. § 42.6(e), the undersigned certifies that on December 3, 2021, a copy of the foregoing PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. 10,197,257, Petitioner's Power of Attorney, and all associated exhibits were served in their entirety on the following counsel of record for Patent Owner via Express Mail:

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**CERTIFICATE OF COMPLIANCE WITH TYPE-VOLUME
REQUIREMENTS UNDER 37 C.F.R. § 42.24**

Under 37 C.F.R. § 42.24(d), the undersigned certifies that the PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. 10,197,257 complies with the type-volume requirements of 37 C.F.R. § 42.24(a)(1)(i) because it contains 8,869 words, excluding the parts of the Petition exempted by 37 C.F.R. § 42.24(a), but including words in images.

This Petition also complies with the typeface requirements of 37 C.F.R. § 42.6(a)(2)(ii) and the type style requirements of 37 C.F.R. § 42.6(a)(2)(iii) and (iv).

Dated: December 3, 2021

Respectfully submitted,

/s/ David M. Magee

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