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14 *[continued on next page]*

15 **UNITED STATES DISTRICT COURT**

16 **SOUTHERN DISTRICT OF CALIFORNIA**

17 INTREPID AUTOMATION, INC., a
18 Delaware Corporation;

19 Plaintiff,

20 v.

21 3D SYSTEMS CORPORATION, a
22 Delaware Corporation; and 3D
23 SYSTEMS, INC., a California
Corporation,

24 Defendants.

Case No.: 3:24-cv-02262-AGS-DDL

**DEFENDANTS 3D SYSTEMS
CORPORATION AND 3D SYSTEMS,
INC.'S ANSWER TO PLAINTIFF'S
COMPLAINT FOR PATENT
INFRINGEMENT AND
COUNTERCLAIMS**

Complaint Filed: December 4, 2024

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**DEFENDANTS 3D SYSTEMS CORPORATION AND 3D SYSTEMS, INC.'S ANSWER TO
PLAINTIFF'S COMPLAINT FOR PATENT INFRINGEMENT AND COUNTERCLAIMS**

3:24-cv-02262-AGS-DDL

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DEFENDANTS 3D SYSTEMS CORPORATION AND 3D SYSTEMS, INC.'S ANSWER TO
PLAINTIFF'S COMPLAINT FOR PATENT INFRINGEMENT AND COUNTERCLAIMS

3:24-cv-02262-AGS-DDL

Defendants 3D Systems Corporation and 3D Systems, Inc. (collectively “3DS”) hereby answer Plaintiff Intrepid Automation, Inc.’s (“Plaintiff”) Complaint for Patent Infringement (“Complaint”). To the extent any allegation in the Complaint is not expressly or specifically admitted or otherwise addressed, it is denied.

INTRODUCTION

1. Answering Paragraph 1 of the Complaint, 3DS admits that it announced the commercial release of the PSLA 270. 3DS denies the remaining allegations in this paragraph.

2. Answering Paragraph 2 of the Complaint, 3DS denies the allegations in this paragraph.

3. Answering Paragraph 3 of the Complaint, 3DS admits that on or around November 7, 2024, Defendants announced the PSLA 270 as a “new mid-frame projector-based polymer 3D printing platform.” Except as otherwise expressly admitted, 3DS denies the remaining allegations in this paragraph.

4. Answering Paragraph 4 of the Complaint, 3DS admits working on a yet to be released medium-format printer, large-format printer project, and bioprinter. Except as otherwise expressly admitted, 3DS denies the remaining allegations in this paragraph.

5. Answering Paragraph 5 of the Complaint, 3DS denies the allegations in this paragraph.

6. Answering Paragraph 6 of the Complaint, 3DS admits this lawsuit alleges infringement of Plaintiff’s United States Patent Nos. 11,014,301 and 11,338,511. 3DS denies the remaining allegations in this paragraph.

7. Answering Paragraph 7 of the Complaint, 3DS admits that this case is related to the Trade Secrets Case and that the Trade Secrets Case “involves allegations by 3DS that Intrepid Automation and its founders misappropriated alleged trade secrets . . . and counterclaims by Intrepid Automation against 3DS and one of its employees[.]” 3DS denies the remaining allegations in this paragraph.

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2 8. Answering Paragraph 8 of the Complaint, 3DS lacks knowledge sufficient to
3 form a belief about the truth of this allegation and deny on that basis.

4 9. Answering Paragraph 9 of the Complaint, 3DS admits that 3D Systems
5 Corporation is a Delaware corporation. 3DS denies the remaining allegations in this
6 paragraph.

7 10. Answering Paragraph 10 of the Complaint, 3DS denies the allegations in this
8 paragraph.

9 11. Answering Paragraph 11 of the Complaint, 3DS admits the allegations in this
10 paragraph.

11 12. Answering Paragraph 12 of the Complaint, 3DS admits the allegations in this
12 paragraph.

13 13. Answering Paragraph 13 of the Complaint, 3DS admits that certain
14 employment contracts have been executed between 3D Systems Corporation and certain
15 employees who worked in San Diego, including Ben Wynne, Christopher Tanner, Robert
16 Mueller, Jamie Etcheson, and Ivan Chousal. 3DS denies the remaining allegations in this
17 paragraph.

18 14. Answering Paragraph 14 of the Complaint, 3DS admits that it is the parent
19 company of 3D Systems, Inc. and, consistent with the relationship, directs, controls or is
20 otherwise responsible for certain operations and/or activities of 3D Systems, Inc. 3DS
21 denies the remaining allegations in this paragraph.

22 15. Answering Paragraph 15 of the Complaint, this paragraph states a legal
23 conclusion to which no response is required. To the extent a response is required, 3DS
24 denies the allegations in this paragraph.

25 16. Answering Paragraph 16 of the Complaint, 3DS admits the allegations in this
26 paragraph.

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1 17. Answering Paragraph 17 of the Complaint, 3DS admits that this Court may
2 exercise personal jurisdiction over 3D Systems Corporation and 3D Systems, Inc. 3DS
3 denies the remaining allegations in this paragraph.

4 18. Answering Paragraph 18 of the Complaint, 3DS asserts that the first sentence
5 of this paragraph states a legal conclusion to which no response is required. 3DS further
6 admits that this Court may exercise personal jurisdiction over 3D Systems Corporation and
7 3D Systems, Inc. To the extent further response is required, 3DS denies the remaining
8 allegations in this paragraph.

9 19. Answering Paragraph 19 of the Complaint, 3DS admits to the venue of this
10 Court. 3DS denies the remaining allegations in this paragraph.

11 20. Answering Paragraph 20 of the Complaint, 3DS admits that the United States
12 Patent and Trademark Office (“USPTO”) issued the ’301 Patent on May 25, 2021 and that
13 a copy of the ’301 Patent appears to be attached to the Complaint as Exhibit 1. 3DS denies
14 the remaining allegations in this paragraph.

15 21. Answering Paragraph 21 of the Complaint, 3DS admits that the USPTO issue
16 the ’511 Patent on May 24, 2022, and that a copy of the ’511 Patent appears to be attached
17 to the Complaint as Exhibit 2. 3DS denies the remaining allegations in this paragraph.

18 22. Answering Paragraph 22 of the Complaint, this paragraph states a legal
19 conclusion to which no response is required. To the extent a response is required, 3DS
20 denies the allegations in this paragraph.

21 23. Answering Paragraph 23 of the Complaint, 3DS denies the first sentence of
22 this paragraph, and admits the second sentence of this paragraph.

23 24. Answering Paragraph 24 of the Complaint, 3DS admits that “traditional SLA
24 devices employ a laser.” 3DS denies the remaining allegations in this paragraph.

25 25. Answering Paragraph 25 of the Complaint, this paragraph states a legal
26 conclusion to which no response is required. To the extent a response is required, 3DS
27 denies the allegations in this paragraph.

37. Answering Paragraph 37 of the Complaint, 3DS lacks knowledge sufficient to form a belief about the truth of these allegations and denies them on that basis.

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1 38. Answering Paragraph 38 of the Complaint, 3DS lacks knowledge sufficient
2 to form a belief about the truth of these allegations and denies them on that basis.

3 39. Answering Paragraph 39 of the Complaint, 3DS lacks knowledge sufficient
4 to form a belief about the truth of these allegations and denies them on that basis.

5 40. Answering Paragraph 40 of the Complaint, 3DS lacks knowledge sufficient
6 to form a belief about the truth of these allegations and denies them on that basis.

7 41. Answering Paragraph 41 of the Complaint, 3DS lacks knowledge sufficient
8 to form a belief about the truth of these allegations and denies them on that basis.

9 42. Answering Paragraph 42 of the Complaint, 3DS lacks knowledge sufficient
10 to form a belief about the truth of these allegations and denies them on that basis.

11 43. Answering Paragraph 43 of the Complaint, 3DS lacks knowledge sufficient
12 to form a belief about the truth of these allegations and denies them on that basis.

13 44. Answering Paragraph 44 of the Complaint, 3DS lacks knowledge sufficient
14 to form a belief about the truth of these allegations and denies them on that basis.

15 45. Answering Paragraph 45 of the Complaint, 3DS lacks knowledge sufficient
16 to form a belief about the truth of the allegations in the first sentence of this paragraph and
17 denies them on that basis. 3DS admits the remaining allegations of this paragraph.

18 46. Answering Paragraph 46 of the Complaint, 3DS lacks knowledge sufficient
19 to form a belief about the truth of these allegations and denies them on that basis.

20 47. Answering Paragraph 47 of the Complaint, 3DS denies the allegations in this
21 paragraph.

22 48. Answering Paragraph 48 of the Complaint, 3DS admits that a copy of the press
23 release dated November 1, 2023, regarding 3DS's expected preview of the PSLA 270 at
24 the Formnext Conference, appears to be attached to the Complaint as Exhibit 3. 3DS further
25 admits that 3DS previewed the PSLA 270 at the Formnext 2023 conference. 3DS denies
26 the remaining allegations in this paragraph.

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1 49. Answering Paragraph 49 of the Complaint, 3DS lacks knowledge sufficient
2 to form a belief about the truth of the allegations that Intrepid's former Vice President of
3 Research and Development attended the 2023 Formnext conference and observed a display
4 related to the PSLA 270 and denies them on that basis. 3DS denies the remaining
5 allegations of this paragraph.

6 50. Answering Paragraph 50 of the Complaint, 3DS admits the allegations in this
7 paragraph.

8 51. Answering Paragraph 51 of the Complaint, 3DS denies the allegations in this
9 paragraph.

10 52. Answering Paragraph 52 of the Complaint, 3DS denies the allegations in this
11 paragraph.

12 53. Answering Paragraph 53 of the Complaint, 3DS denies the allegations in this
13 paragraph.

14 54. Answering Paragraph 54 of the Complaint, 3DS admits that a copy of an
15 excerpt of the November 7, 2024 press release, appears to be copied and pasted to the
16 Complaint. 3DS admits the remaining allegations of this paragraph.

17 55. Answering Paragraph 55 of the Complaint, 3DS admits the allegations in this
18 paragraph.

19 56. Answering Paragraph 56 of the Complaint, 3DS admits the allegations in this
20 paragraph.

21 57. Answering Paragraph 57 of the Complaint, 3DS admits the allegations in this
22 paragraph.

23 58. Answering Paragraph 58 of the Complaint, this paragraph states a legal
24 conclusion to which no response is required. To the extent a response is required, 3DS
25 denies the allegations in this paragraph
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27
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65. Answering Paragraph 65 of the Complaint, 3DS admits the allegations in this paragraph.

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1 66. Answering Paragraph 66 of the Complaint, 3DS admits that a copy of the
2 November 14, 2024 press release titled “Sauber Motorsports Drives Innovation with 3D
3 Systems’ Solutions” appears to be attached to the Complaint as Exhibit 8. 3DS further
4 admits that the Exhibit 8 states “Sauber Motorsports, a Swiss motorsport engineering
5 company, has selected 3D Systems’ latest polymer 3D printing technologies to accelerate
6 innovation. Sauber intends to add 10 3D Systems 3D printers — eight SLA 750 Dual and
7 two PSLA 270 — to its manufacturing workflow.” 3DS denies any remaining allegations
8 in this paragraph.

9 67. Answering Paragraph 67 of the Complaint, 3DS denies the allegations in this
10 paragraph.

11 68. Answering Paragraph 68 of the Complaint, 3DS denies that it is testing a DLP
12 multiprojection printer system other than the PSLA 270. 3DS further denies that it is
13 considering more than one large-format printer as part of its product line of DLP
14 multiprojection 3D printers. 3DS admits the remaining allegations in this paragraph.

15 69. Answering Paragraph 69 of the Complaint, 3DS admits that the PSLA 270 is
16 not a large-format device, that it uses multiprojection technology, and that the PSLA 270
17 product website states that its maximum build area is 242 mm x 265 mm (approximately
18 9.5 in x 10.5 in.). 3DS lacks knowledge sufficient to form a belief about the truth of the
19 other allegations in this paragraph and on that basis denies them.

20 70. Answering Paragraph 70 of the Complaint, 3DS denies the allegations in this
21 paragraph.

22 71. Answering Paragraph 71 of the Complaint, 3DS admits that a copy of the
23 Transcript of the November 27, 2024, Quarter 3 of 2024, Earnings Conference Call,
24 appears to be attached to the Complaint as Exhibit 9 and that Jeffrey Graves described the
25 PSLA 270 to investors as “the first of what will be a family of new projector-over-VAT
26 printing systems.” 3DS denies any remaining allegations in this paragraph.

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1 72. Answering Paragraph 72 of the Complaint, 3DS denies the allegations in this
2 paragraph.

3 73. Answering Paragraph 73 of the Complaint, 3DS lacks knowledge sufficient
4 to form a belief about the truth of the allegations in this paragraph and denies them on that
5 basis.

6 74. Answering Paragraph 74 of the Complaint, 3DS denies the allegations in this
7 paragraph.

8 75. Answering Paragraph 75 of the Complaint, 3DS denies the allegations in this
9 paragraph.

10 76. Answering Paragraph 76 of the Complaint, 3DS admits that it is developing
11 solutions for regenerative medicine, but denies that it is “testing or using” a bioprinting
12 solution for regenerative medicine purposes.

13 77. Answering Paragraph 77 of the Complaint, 3DS denies the allegations in this
14 paragraph.

15 78. Answering Paragraph 78 of the Complaint, 3DS admits that a copy of the
16 patent application titled “Systems and Methods for Performing Optically Calibrated Large-
17 Area Microstereolithography,” U.S. Patent Pub. No. 2022/0339882, appears to be attached
18 to the Complaint as Exhibit 10. 3DS further admits that Mathew Kenneth Gelber and
19 Jordan Miller are the listed inventors of U.S. Patent Pub. No. 2022/0339882 and that it was
20 filed on behalf of 3DS Systems, Inc. on April 26, 2022. 3DS denies the remaining
21 allegations in this paragraph.

22 79. Answering Paragraph 79 of the Complaint, the first sentence of this paragraph
23 states a legal conclusion to which no response is required. To the extent a response is
24 required, 3DS denies the first sentence of this paragraph. 3DS further denies the remaining
25 allegations in this paragraph.

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1 80. Answering Paragraph 80 of the Complaint, this paragraph states a legal
2 conclusion to which no response is required. To the extent a response is required, 3DS
3 denies the allegations in this paragraph.

4 81. Answering Paragraph 81 of the Complaint, 3DS denies the allegations in this
5 paragraph.

6 82. Answering Paragraph 82 of the Complaint, 3DS admits that 3DS CEO Graves
7 stated on a November 27, 2024 Earnings Call that the technology of the PSLA 270 “is an
8 outgrowth of our work in regenerative medicine[.]” 3DS denies the remaining allegations
9 in this paragraph.

10 83. Answering Paragraph 83 of the Complaint, 3DS denies the allegations in this
11 paragraph, including those in the footnote to this paragraph.

12 84. Answering Paragraph 84 of the Complaint, 3DS admits that the Complaint
13 refers to “[t]he PSLA 270, the large format multiprojection 3D printer(s) in the PSLA 270
14 family, and the 3DS Bioprinter” collectively as “the Accused Instrumentalities.”

15 85. Answering Paragraph 85 of the Complaint, 3DS admits that Ben Wynne,
16 Christopher Tanner, Jamie Etcheson, Ivan Chousal and Robert Mueller resigned in unison
17 from their employment with 3DS in August 2017. 3DS further admits that Wynne, Tanner,
18 Etcheson, Chousal and Mueller formed Intrepid. 3DS denies the remaining allegations in
19 this paragraph.

20 86. Answering Paragraph 86 of the Complaint, 3DS admits it periodically
21 monitors third party patent filings in the 3D printing industry, which would include
22 Intrepid’s patent filings. 3DS denies the remaining allegations in this paragraph.

23 87. Answering Paragraph 87 of the Complaint, 3DS admits the allegations in this
24 paragraph.

25 88. Answering Paragraph 88 of the Complaint, 3DS denies the allegations in this
26 paragraph.

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1 89. Answering Paragraph 89 of the Complaint, 3DS admits Kuester interviewed
2 with Intrepid Automation in January 2021. 3DS denies the remaining allegations in this
3 paragraph.

4 90. Answering Paragraph 90 of the Complaint, 3DS denies the allegations in the
5 first three sentences of this paragraph. 3DS further admits that Kuester testified that he
6 believed that Plaintiff's DLP was "superior" to 3DS's laser-based SLA 750 technology "in
7 terms of speed." 3DS denies the remaining allegations in this paragraph.

8 91. Answering Paragraph 91 of the Complaint, 3DS admits Kuester sent a text
9 asking "Do you have a way to generate a rough build for that large format machine?" and
10 another text asking "Am I allowed to know an approximate mm per hour build speed?"
11 3DS denies the remaining allegations in this paragraph.

12 92. Answering Paragraph 92 of the Complaint, 3DS admits Kuester advised
13 Plaintiff on February 15, 2021 that he had decided to remain employed by 3DS. 3DS denies
14 the remaining allegations in this paragraph.

15 93. Answering Paragraph 93 of the Complaint, 3DS admits that Kuester received
16 in early 2021 an increased salary and a different title. 3DS denies the remaining the
17 allegations in this paragraph.

18 94. Answering Paragraph 94 of the Complaint, 3DS denies the allegations in this
19 paragraph.

20 95. Answering Paragraph 95 of the Complaint, 3DS denies the allegations in this
21 paragraph.

22 96. Answering Paragraph 96 of the Complaint, 3DS admits that Aaron Wood
23 searched for, identified and shared via email 5 or 6 filings of Plaintiff, including U.S. Pat.
24 No. 10,780,640. 3DS denies the remaining the allegations in this paragraph.

25 97. Answering Paragraph 97 of the Complaint, 3DS denies the allegations in this
26 paragraph.

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1 98. Answering Paragraph 98 of the Complaint, 3DS denies the allegations in this
2 paragraph.

3 99. Answering Paragraph 99 of the Complaint, 3DS admits that Patrick Dunne
4 responded to Wood's email by asking what Intrepid's patents "ha[d] to do with" an
5 aerospace customer and noted that Plaintiff's patents "Look[] like a rip off fig. 4." 3Ds
6 further admits that Dunne was referred to Craig White for information about the aerospace
7 customer. 3DS denies the remaining allegations in this paragraph.

8 100. Answering Paragraph 100 of the Complaint, 3DS admits that Hoche
9 responded to Dunne by stating that "It is figure4 with the light engines tied together (larger
10 print area) with a vat (not film). It is all custom built, print size and vat. Since it is DLP,
11 the expectation is that it is fast." 3DS denies the remaining allegations in this paragraph.

12 101. Answering Paragraph 101 of the Complaint, 3DS denies the allegations in this
13 paragraph.

14 102. Answering Paragraph 102 of the Complaint, 3DS admits that Kuester sent an
15 email to Scott Turner on February 24, 2022, stating "we bought TWO FDM companies but
16 don't have the money to invest in just buying Intrepid Automation and getting a machine
17 that would actually make us money[.]" 3DS denies the remaining allegations in this
18 paragraph.

19 103. Answering Paragraph 103 of the Complaint, 3DS admits that Turner sent an
20 email to Kuester stating "We haven't let up on the fab 5. Let's see what happens as funding
21 gets harder and legal fees grow." 3DS denies the remaining allegations in this paragraph.

22 104. Answering Paragraph 104 of the Complaint, 3DS denies the allegations in this
23 paragraph.

24 105. Answering Paragraph 105 of the Complaint, 3DS denies the allegations in this
25 paragraph.

26 106. Answering Paragraph 106 of the Complaint, 3DS admits that it filed the Trade
27 Secrets Case against Intrepid and its founders in May 2021 and that it alleged, among other
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1 things, that the defendants misappropriated from 3DS a trade secret regarding edge-
2 blending. 3DS denies the remaining allegations in this paragraph.

3 107. Answering Paragraph 107 of the Complaint, 3DS admits that, as set forth in
4 3D Systems, Inc.'s Third Supplemental Resp. to Rog. 3 at 14, in Exhibit 6 to the Complaint
5 and excerpted in Parag. 60 of the Complaint, 3DS alleged in the Trade Secrets Case that
6 "3DS's edge blending algorithms and methods comprise multiple permutations of
7 proprietary forms of geometric distortion correction or digital filters or masks, that achieve
8 or comprise warp correction, pixel blending, edge blending bars, stitching, irradiance, and
9 gamma adjustment." 3DS denies the remaining allegations in this paragraph.

10 108. Answering Paragraph 108 of the Complaint, 3DS denies the allegations in this
11 paragraph.

12 109. Answering Paragraph 109 of the Complaint, 3DS denies the allegations in this
13 paragraph.

14 110. Answering Paragraph 110 of the Complaint, 3DS admits that in the Trade
15 Secrets Case, Dkt. No. 531 at ECF Page 18, Defendant Intrepid argued that no 3DS source
16 code produced in the case performed warp correction or gamma adjustment. 3DS denies
17 the remaining allegations in this paragraph.

18 111. Answering Paragraph 111 of the Complaint, 3DS denies the allegations in this
19 paragraph.

20 112. Answering Paragraph 112 of the Complaint, 3DS admits that a copy of the
21 press release dated November 1, 2023 regarding 3DS's expected preview of PSLA 270 at
22 the Formnext Conference, appears to be attached to the Complaint as Exhibit 3. 3DS denies
23 the remaining allegations in this paragraph.

24 113. Answering Paragraph 113 of the Complaint, 3DS denies the allegations in this
25 paragraph.

26 114. Answering Paragraph 114 of the Complaint, 3DS denies the allegations in this
27 paragraph.

COUNT I – INFRINGEMENT OF U.S. PATENT NO. 11,014,301

115. Answering Paragraph 115 of the Complaint, 3DS repeats and incorporates by reference its responses to Paragraphs 1 through 114 of the Complaint as if set forth fully herein.

116. Answering Paragraph 116 of the Complaint, 3DS denies the allegations in this paragraph.

117. Answering Paragraph 117 of the Complaint, 3DS denies the allegations in this paragraph.

118. Answering Paragraph 118 of the Complaint, 3DS denies the allegations in this paragraph.

119. Answering Paragraph 119 of the Complaint, 3DS denies the allegations in this paragraph.

120. Answering Paragraph 120 of the Complaint, 3DS admits the allegations in this paragraph.

121. Answering Paragraph 121 of the Complaint, 3DS denies the allegations in this paragraph.

122. Answering Paragraph 122 of the Complaint, 3DS denies the allegations in this paragraph.

123. Answering Paragraph 123 of the Complaint, 3DS denies the allegations in this paragraph.

124. Answering Paragraph 124 of the Complaint, 3DS denies the allegations in this paragraph.

125. Answering Paragraph 125 of the Complaint, 3DS denies the allegations in this paragraph.

126. Answering Paragraph 126 of the Complaint, 3DS denies the allegations in this paragraph.

1 127. Answering Paragraph 127 of the Complaint, 3DS denies the allegations in this
2 paragraph.

3 **COUNT II – INFRINGEMENT OF U. S. PATENT NO. 11,338,511**

4 128. Answering Paragraph 128 of the Complaint, 3DS repeats and incorporates by
5 reference its responses to Paragraphs 1 through 127 of the Complaint as if set forth fully
6 herein.

7 129. Answering Paragraph 129 of the Complaint, 3DS denies the allegations in this
8 paragraph.

9 130. Answering Paragraph 130 of the Complaint, 3DS denies the allegations in this
10 paragraph.

11 131. Answering Paragraph 131 of the Complaint, 3DS denies the allegations in this
12 paragraph.

13 132. Answering Paragraph 132 of the Complaint, 3DS denies the allegations in this
14 paragraph.

15 133. Answering Paragraph 133 of the Complaint, 3DS denies the allegations in this
16 paragraph.

17 134. Answering Paragraph 134 of the Complaint, 3DS denies the allegations in this
18 paragraph.

19 135. Answering Paragraph 135 of the Complaint, 3DS denies the allegations in this
20 paragraph.

21 136. Answering Paragraph 136 of the Complaint, 3DS denies the allegations in this
22 paragraph.

23 137. Answering Paragraph 137 of the Complaint, 3DS denies the allegations in this
24 paragraph.

25 138. Answering Paragraph 138 of the Complaint, 3DS denies the allegations in this
26 paragraph.

139. Answering Paragraph 139 of the Complaint, 3DS denies the allegations in this paragraph.

140. Answering Paragraph 140 of the Complaint, 3DS denies the allegations in this paragraph.

PRAYER FOR RELIEF

3DS denies that Plaintiff is entitled to any of the relief requested in Plaintiffs' Complaint.

DEFENDANTS' DEFENSES

Without assuming any burden that it would not otherwise bear, and without waiving or excusing any of Plaintiff's own burden of proof and production of evidence, 3DS alleges the following separate and distinct affirmative and other defenses to each of the purported causes of action set forth in the Complaint:

FIRST DEFENSE

(Failure to State a Claim)

1. The Complaint, and each and every cause of action alleged in it, fails to state facts sufficient to constitute a cause of action upon which relief may be granted.

SECOND DEFENSE

(Non-Infringement)

2. 3DS has not and does not infringe (not directly, indirectly, contributorily, or by inducement), either literally or under the doctrine of equivalents, and is not liable for infringement of any valid and enforceable claim of the Asserted Patents.

THIRD DEFENSE

(Invalidity)

3. The claims of the Asserted Patents are invalid for failure to satisfy the conditions for patentability set forth in Title 35 of the United States Code, including without limitation 35 U.S.C. §§ 101, 102, 103, and 112.

1 4. The claims of the Asserted Patents are directed to patent-ineligible subject
2 matter and are unenforceable under 35 U.S.C. § 101 because the claims are directed to
3 abstract ideas or other non-statutory subject matter.

4 5. The claims of the Asserted Patents are invalid and unenforceable under 35
5 U.S.C. § 102 because the claims lack novelty and are taught and suggested by the prior art.

6 6. The claims of the Asserted Patents are invalid and unenforceable under 35
7 U.S.C. § 103 because the claims are obvious in view of the prior art.

8 7. The claims of the Asserted Patents are invalid and unenforceable for failing
9 to satisfy conditions set forth in 35 U.S.C. § 112 such as failure of written description, lack
10 of enablement, and claim indefiniteness.

11 **FOURTH DEFENSE**

12 (No Willful Infringement)

13 8. Plaintiff is not entitled to enhanced or increased damages for willful
14 infringement because 3DS has not engaged in conduct that meets the standard of willful
15 infringement.

16 **FIFTH DEFENSE**

17 (Equitable Doctrines)

18 9. Plaintiff's claims are barred, in whole or in part, or limited under principles
19 of equity, including laches, prosecution laches, estoppel, waiver, acquiescence, implied
20 license, disclaimer, patent misuse, and/or unclean hands.

21 **SIXTH DEFENSE**

22 (Prosecution History Estoppel)

23 10. Plaintiff is estopped based on amendments, statements, representations, and
24 admissions made during the prosecution of the applications that led to the Asserted Patents
25 from asserting any interpretation of the claims of the Asserted Patents that would be broad
26 enough to cover any of 3DS's products or methods alleged to infringe the Asserted Patents.

SEVENTH DEFENSE

(Ensnarement)

11. Plaintiff's claims are barred by the doctrine of ensnarement. Plaintiff is foreclosed from asserting infringement under the doctrine of equivalents to the extent the scope of such equivalents would ensnare the prior art.

EIGHTH DEFENSE

(Improper Inventorship)

12. Plaintiff's alleged claims for infringement of the Asserted Patents are barred because the claims are invalid for failure to comply with requirements of 35 U.S.C. § 102(f).

NINTH DEFENSE

(Lack of Standing/License/Improper Ownership)

13. Plaintiff's claims for relief are barred or limited because it is not the rightful owner of the Asserted Patents and therefore lacks standing, and because 3DS has a license (e.g., shop right) to and/or outright ownership of the Asserted Patents.

TENTH DEFENSE

(Inequitable Conduct/Unclean Hands)

14. The Asserted Patents are unenforceable due to Plaintiff's inequitable conduct before the USPTO during the prosecution of the patent applications that issued into the Asserted Patents. Plaintiff withheld material information from the USPTO, and did so with the specific intent to deceive the USPTO.

15. On May 25, 2021 and May 24, 2022, the USPTO issued the '301 and '511 Patents, respectively.

16. Claim 1 of the '301 Patent is representative of the subject matter of the Asserted Patents, and recites an additive manufacturing system that includes the following: (1) *an image projection system* comprising a plurality of image projectors that project a composite image onto a build area within a resin pool, wherein each of the image projectors

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1 projects a sub-image onto a portion of the build area, wherein the composite image
2 comprises a plurality of sub-images arranged in an array, and wherein two or more adjacent
3 sub-images in the array overlap at two or more sub-image edges; (2) *a display subsystem*,
4 wherein the display subsystem controls the image projection system and each of the image
5 projectors to adjust properties and alignment of a position of each sub-image in the array;
6 and (3) *a stack of filters* configured to adjust the properties of each sub-image in the array,
7 an irradiance mask configured to normalize irradiance; a gamma adjustment mask
8 configured to adjust sub-image energy by mapping a plurality of pixel intensity levels to
9 an addressable range of reactivity for curing resin of the resin pool, thereby reducing
10 aliasing artifacts of curved or smooth surfaces; a warp correction filter configured to
11 provide geometric correction; and an edge blending bar at one or more sub-image edge.

12 17. During prosecution of the Asserted Patents, IA and the listed inventors of the
13 Asserted Patents (the “Alleged Co-Inventors”) had a duty of candor and good faith to the
14 USPTO under 37 C.F.R. §1.56, which requires disclosure of all information known to the
15 applicant and inventors to be material to patentability.

16 18. Despite this duty to disclose, IA, through itself and through the Alleged Co-
17 Inventors (who also co-founded IA), engaged in inequitable conduct by intentionally
18 withholding material information from the USPTO with the specific intent to deceive the
19 USPTO.

20 19. For example, the Alleged Co-Inventors of the Asserted Patents were exposed
21 to and worked on multi-projector 3D printing technology during their employment with
22 3DS. Among other things, upon joining 3DS in June 2016, the Alleged Co-Inventors were
23 provided an overview of the confidential work done by 3DS on DLP multi-projector 3D
24 printers. The Alleged Co-Inventors were provided with a June 30, 2016 power point
25 presentation titled “6-Pack” (the “6-Pack presentation”), which detailed technical
26 specifications of a multi-projector DLP 3D printer project that was coordinated by 3DS
27 employee Guthrie Cooper. Trade Secrets Dkt. No. 552-17. The 6-Pack presentation
28

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1 described a 3D multi-projector printer with 6 digital light projectors and features that
2 included, among other things, “image blending,” the ability to calibrate power across all
3 projectors uniformly, and geometric calibration.

4 20. In addition to the 6-Pack presentation, the Alleged Co-Inventors were
5 provided by 3DS, or otherwise had access to at 3DS, numerous 3DS documents and
6 technical information relating to 3D multi-projector printers and corresponding image
7 processing and functionality, including masked irradiance, power calibration, geometric
8 distortion correction, image blending requirements for pixel overlap, warp correction,
9 blending bars, etc. Dkt. No. 32-8 (3D Systems, Inc.’s Third Supplemental Resp. to Rogs.
10 3 and 4).

11 21. The 6-Pack presentation – which was authored by 3DS employees and
12 contains inventions, concepts or contributions conceived and developed prior to the
13 Alleged Co-Inventors’ employment at 3DS – discloses many of the same or similar
14 technical details that are disclosed and claimed in the Asserted Patents. %

15 22. For example, the 6-Pack presentation discloses two block diagrams of a 3D
16 multi-projector DLP printer with image adjusting capabilities. One block diagram discloses
17 a 3D printer with multiple projectors and a GPU and PC for performing image adjusting
18 features such as geocalibration, blending, power cal (mask), and rotation, decompression,
19 stitching and chopping. The other block diagram discloses a 3D printer that includes
20 multiple projectors and a GPU and CPU for performing image adjusting features such as
21 geocalibration, blending, power cal (mask), rotation, X Y offset, X Y scaling, pincussion
22 correction, decompression, stitching, cropping, a blending interface and machine vision
23 cam. %

24 23. As an example, the following table presents non-limiting examples of where
25 claim terms of the Asserted Patents (e.g., Claim 1 from the ’301 and ’511 Patents) find
26 support in the 6-Pack Presentation. Similar support is found for the remaining claims of
27 the ’301 and ’511 Patents.

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Claim 1 of '301 Patent	Disclosure in 6-Pack Presentation
An additive manufacturing system, comprising: an image projection system comprising a plurality of image projectors that project a composite image onto a build area within a resin pool, wherein each of the image projectors projects a sub-image onto a portion of the build area, wherein the composite image comprises a plurality of sub-images arranged in an array, and wherein two or more adjacent sub-images in the array overlap at two or more sub-image edges;	Short and Long Term Block Diagram of 6-Pack Various Projector Layouts with plurality of image projectors, composite image, plurality of sub-images arranged in an array, edge blending bars, and projecting of composite image onto build area with resin pool.
a display subsystem, wherein the display subsystem controls the image projection system and each of the image projectors to adjust properties and alignment of a position of each sub-image in the array; and	In the short term block diagram, reference to 6 port HDMI video card with RAM and GPU and Video Card PC, both with stated image adjusting functionality. In the long term block diagram, reference to 6 Port HDMI video card with RAM and GPU and New PJ600 P104 with RAM, GPU, CPU, and HD, both with stated image adjustment functionality. Reference to “syncing projectors & image blending,” “ability to calibrate power

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1	Claim 1 of '301 Patent	Disclosure in 6-Pack Presentation
2		across all projectors uniformly,”
3		“calibration target to perform geo-cal,”
4		“mechanical alignment for uniform
5		blended image” and FW to “sync up
6		Power Cal per projector” and blending of
7		“grayscale masks as well as image”
8		
9	a stack of filters configured to adjust the	In the short term block diagram, reference
10	properties of each sub-image in the array,	to the following image adjusting
11	the stack of filters comprising:	functionality: geocalibration, blending,
12	an irradiance mask configured to	power cal (mask) rotation, decompression,
13	normalize irradiance;	stitching and cropping.
14	a gamma adjustment mask configured to	
15	adjust sub-image energy by mapping a	In the long term block diagram, reference
16	plurality of pixel intensity levels to an	to the following image adjusting
17	addressable range of reactivity for curing	functionality: geocalibration, blending,
18	resin of the resin pool, thereby reducing	power cal (mask), rotation, X Y offset, X
19	aliasing artifacts of curved or smooth	Y scaling, pincushion correction,
20	surfaces;	decompression, stitching, and cropping.
21	a warp correction filter configured to	
22	provide geometric correction; and	Reference to “syncing projectors & image
23	an edge blending bar at one or more sub-	blending,” “ability to calibrate power
24	image edges.	across all projectors uniformly,”
25		“calibration target to perform geo-cal”,
26		“mechanical alignment for uniform
27		

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Claim 1 of '301 Patent	Disclosure in 6-Pack Presentation
	blended image” and FW to “sync up Power Cal per projector” and blending of “grayscale masks as well as image”

Claim 1 of the '511 Patent	Disclosure in 6-Pack Presentation
A method comprising: a. providing an additive manufacturing system, comprising: an image projection system comprising a plurality of image projectors; and an image display subsystem; b. projecting a composite image onto a build area within a resin pool using the image projection system, wherein:	Short and Long Term Block Diagram of 6-Pack Various Projector Layouts with plurality of image projectors, composite image, plurality of sub-images arranged in an array, edge blending bars, and projecting of composite image onto build area with resin pool. In the short term block diagram, reference to 6 port HDMI video card with RAM and GPU and Video Card PC, both with stated image adjusting functionality. In the long term block diagram, reference to 6 Port HDMI video card with RAM and GPU and New PJ600 P104 with RAM, GPU, CPU, and HD, both with stated image adjustment functionality.

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Claim 1 of the '511 Patent	Disclosure in 6-Pack Presentation
	Various Projector Layouts with plurality of image projectors, composite image, plurality of sub-images arranged in an array, edge blending bars, and projecting of composite image onto build area with resin pool.
the image projection system is controlled by the image display subsystem; the composite image comprises a plurality of sub-images arranged in an array; two or more adjacent sub-images in the array overlap at two or more sub-image edges; and each sub-image is projected onto a portion of the build area using one of the plurality of image projectors; and	Short and Long Term Block Diagram of 6-Pack Various Projector Layouts with plurality of image projectors, composite image, plurality of sub-images arranged in an array, edge blending bars, and projecting of composite image onto build area with resin pool.
c. adjusting properties and aligning a position of each sub-image in the array using a set of filters comprising: an irradiance mask that normalizes irradiance;	In the short term block diagram, reference to the following image adjusting functionality: geocalibration, blending, power cal (mask) rotation, decompression, stitching and cropping.

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Claim 1 of the '511 Patent	Disclosure in 6-Pack Presentation
a gamma adjustment mask that adjusts sub-image energy based on a reactivity of resin in the resin pool; a warp correction filter that provides geometric correction; and an edge blending bar at one or more sub-image edges.	In the long term block diagram, reference to the following image adjusting functionality: geocalibration, blending, power cal (mask), rotation, X Y offset, X Y scaling, pincushion correction, decompression, stitching, and cropping. Reference to “syncing projectors & image blending,” “ability to calibrate power across all projectors uniformly,” “calibration target to perform geo-cal” “mechanical alignment for uniform blended image” and FW to “sync up Power Cal per projector” and blending of “grayscale masks as well as image”

24. Upon information and belief, IA and the Alleged Co-Inventors incorporated teachings of the 6-Pack Presentation and other documents they had access to while employed by 3DS into the patent filings that matured into the Asserted Patents.

25. Accordingly, the Asserted Patents incorporate inventions, concepts or contributions made by individuals other than those listed as inventors on the patents (the “Omitted Inventors”), including but not limited to Guthrie Cooper. Many of these inventions, concepts and contributions are set forth in the above-described 6-Pack presentation and other documents that the Alleged Co-Inventors had access to while employed by 3DS, such as, for example, the above-described block diagrams.

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1 26. As reflected above, the Omitted Inventors contributed significantly to the
2 conception of one or more claims in the Asserted Patents, such that they should have been
3 named as inventors (joint or otherwise) under 35 U.S.C. § 116.

4 27. IA knew of the Omitted Inventors' contributions during prosecution of the
5 Asserted Patents but failed to disclose this fact to the Patent Office or to correct
6 inventorship. Instead, IA represented to the Patent Office that the Alleged Co-Inventors
7 were the sole inventors of the Asserted Patents, which was a material representation.

8 28. This misrepresentation and omission regarding inventorship was material
9 because accurate inventorship is essential to patent validity, and failure to name all
10 inventors can render a patent invalid under 35 U.S.C. § 256. But for this inequitable
11 conduct, the USPTO would not have issued the Asserted Patents in their current form.

12 29. IA made this misrepresentation and omission with specific intent to deceive
13 the USPTO, as evidenced by IA's knowledge of the Omitted Inventors' roles and the
14 deliberate exclusion of them from the inventor list to facilitate issuance and IA's exclusive
15 ownership of the Asserted Patents. Had IA properly listed the Omitted Inventors, IA would
16 not have exclusive ownership of the Asserted Patents.

17 30. Moreover, IA failed to disclose to the USPTO the existence of U.S. Patent
18 No. 10,773,510 or the application that matured into the '510 patent (collectively referred
19 to as "the '510 patent"), as well as other material information during prosecution of the
20 Asserted Patents. *See* Request for Judicial Notice ("RJN"), Ex. A (U.S. Patent No.
21 10,773,510) (the "'510 patent"). The '510 patent is assigned to 3DS, lists as co-inventors
22 two of the Asserted Patents' Alleged Co-Inventors, Ben Wynne and Robert Mueller, and
23 relates to work that Wynne and Mueller performed at and for 3DS.

24 31. The '510 patent discloses and claims systems and methods that are disclosed
25 and claimed in the Asserted Patents. For example, the '510 patent discloses a 3D multi-
26 projector printer and related image adjusting functionality, such as "correction, calibration,
27 scaling and stitching" image blending and calibration techniques. *See, e.g.,* '510 patent at
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Col. 6, lines 9-15, “Correction includes de-warping, and corrections for distortions such as barrel distortion and the keystone effect. Calibration can include compensation for light source 26 output and variation in an optical path length from the light engine 10 to the build plane 24.” *Id.*

32. In addition, in its defense of the Trade Secrets Case, IA argued that the filters described in the Asserted Patents are well-known and conventional technology. Trade Secrets Case Dkt. No. 509-6 (Rebuttal Expert Report of Will Allen, pp. 11-15 (“*Edge blending* has been well-known in multi-projector systems for decades.”); pp. 16-22 (“[T]he use of *blending bars* was known long before the individual Defendants worked at 3DS.”); pp. 26-29 (“*Warp correction* has been well-known in multi-projector systems for many years.”); pp. 29-32 (“Extensive *irradiance control* methods for multi-projector visual imaging systems have been developed and employed for years [cites several references].”; pp. 32-41 (“*Gamma characterization and adjustment*, or compensation, for multi-projector imaging systems, has been well known for decades.”) (emphasis added in all)).

33. As an example, the following table presents non-limiting examples of where claim terms of the Asserted Patents (e.g., Claim 1 from the ’301 and ’511 Patents) find support in the ’510 Patent and/or IA’s admissions in the Trade Secrets Case that the “four filters” are well known and conventional technology. Similar support is found for the remaining claims of the ’301 and ’511 Patents.

Claim 1 of ’301 Patent	Disclosure in ’510 Patent and/or IA’s Admission that “four filters” are Well-Known and Conventional
An additive manufacturing system, comprising: an image projection system comprising a plurality of image projectors that project a	’510 Patent discloses an image projection system in Figures 7 and 8 and corresponding portions of the specification that includes a plurality of image

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1	Claim 1 of '301 Patent	Disclosure in '510 Patent and/or IA's
2		Admission that "four filters" are Well-
3		Known and Conventional
4	composite image onto a build area within	projectors that project a composite image
5	a resin pool, wherein each of the image	onto a build area within a resin pool, and
6	projectors projects a sub-image onto a	each of the projectors projects a sub-image
7	portion of the build area, wherein the	onto a portion of the build area, where the
8	composite image comprises a plurality of	sub-image are arranged in an array, and
9	sub-images arranged in an array, and	edge blending bars.
10	wherein two or more adjacent sub-images	
11	in the array overlap at two or more sub-	
12	image edges;	
13		
14	a display subsystem, wherein the display	'510 Patent discloses a display subsystem
15	subsystem controls the image projection	in controller 18 and system processor 34
16	system and each of the image projectors to	and corresponding portions of the
17	adjust properties and alignment of a	specification
18	position of each sub-image in the array;	
19	and	
20		
21	a stack of filters configured to adjust the	IA argued that the filters described in the
22	properties of each sub-image in the array,	Asserted Patents are well-known and
23	the stack of filters comprising:	conventional technology. Trade Secrets
24	an irradiance mask configured to	Case Dkt. No. 509-6 (Rebuttal Export
25	normalize irradiance;	Report of Will Allen, pp. 11-15 (" Edge
26	a gamma adjustment mask configured to	blending has been well-known in multi-
27	adjust sub-image energy by mapping a	projector systems for decades."); pp. 16-

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Claim 1 of '301 Patent	Disclosure in '510 Patent and/or IA's Admission that "four filters" are Well-Known and Conventional
plurality of pixel intensity levels to an addressable range of reactivity for curing resin of the resin pool, thereby reducing aliasing artifacts of curved or smooth surfaces; a warp correction filter configured to provide geometric correction; and an edge blending bar at one or more sub-image edges.	22 ("[T]he use of <i>blending bars</i> was known long before the individual Defendants worked at 3DS."); pp. 26-29 ("<i>Warp correction</i> has been well-known in multi-projector systems for many years."); pp. 29-32 ("Extensive <i>irradiance control</i> methods for multi-projector visual imaging systems have been developed and employed for years [cites several references]."; pp. 32-41 ("<i>Gamma characterization and adjustment</i>, or compensation, for multi-projector imaging systems, has been well known for decades.") (emphasis added in all))
Claim 1 of the '511 Patent	Disclosure in '510 Patent and/or IA's Admission that "four filters" are Well-Known and Conventional
A method comprising: a. providing an additive manufacturing system, comprising:	'510 Patent discloses an image projection system in Figures 7 and 8 and corresponding portions of the specification that includes a plurality of image

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Claim 1 of '301 Patent	Disclosure in '510 Patent and/or IA's Admission that "four filters" are Well-Known and Conventional
an image projection system comprising a plurality of image projectors; and an image display subsystem; b. projecting a composite image onto a build area within a resin pool using the image projection system, wherein:	projectors that project a composite image onto a build area within a resin pool, and each of the projectors projects a sub-image onto a portion of the build area, where the sub-image are arranged in an array, and edge blending bars. '510 Patent discloses a display subsystem in controller 18 and system processor 34 and corresponding portions of the specification.
the image projection system is controlled by the image display subsystem; the composite image comprises a plurality of sub-images arranged in an array; two or more adjacent sub-images in the array overlap at two or more sub-image edges; and each sub-image is projected onto a portion of the build area using one of the plurality of image projectors; and	'510 Patent discloses a composite image with a plurality of sub-images projected using a plurality of image projectors.

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Claim 1 of '301 Patent	Disclosure in '510 Patent and/or IA's Admission that "four filters" are Well-Known and Conventional
c. adjusting properties and aligning a position of each sub-image in the array using a set of filters comprising: an irradiance mask that normalizes irradiance; a gamma adjustment mask that adjusts sub-image energy based on a reactivity of resin in the resin pool; a warp correction filter that provides geometric correction; and an edge blending bar at one or more sub-image edges.	IA argued that the filters described and claimed in the Asserted Patents are well-known and conventional technology. Trade Secrets Case Dkt. No. 509-6 (Rebuttal Export Report of Will Allen, pp. 11-15 ("<i>Edge blending</i> has been well-known in multi-projector systems for decades."); pp. 16-22 ("[T]he use of <i>blending bars</i> was known long before the individual Defendants worked at 3DS."); pp. 26-29 ("<i>Warp correction</i> has been well-known in multi-projector systems for many years."); pp. 29-32 ("Extensive <i>irradiance control</i> methods for multi-projector visual imaging systems have been developed and employed for years [cites several references]."; pp. 32-41 ("<i>Gamma characterization and adjustment</i>, or compensation, for multi-projector imaging systems, has been well known for decades.") (emphasis added in all))

34. During prosecution of the Asserted Patents, IA did not disclose to the Patent Office either the existence of the '510 patent (despite having two inventors in common) or its belief that the four filters claimed by the Asserted Patents are well-known and conventional technology. Both the existence of the '510 patent and IA's belief that the four filters are well-known and conventional technology constitute material information to the patentability of the claims in the Asserted Patents because they are relevant prior art under 35 U.S.C. §§ 102 or 103, as they anticipated or rendered obvious one more claims of the Asserted Patents.

35. As further example, as shown below, during prosecution of the Asserted Patents, IA argued to the Patent Office that the "stack of filters that are not described by, or obvious from" the cited prior art. Dkt. No. 26-3.

Attorney Docket: INTRP003C1

Applicant traverses the 103 rejections, and claim 1 has been amended for clarity to expedite prosecution. The stack of filters comprises the irradiance mask, the gamma adjustment mask, the warp correction filter, and the edge blending bar. Claim 1 recites limitations for the stack of filters that are not described by, or obvious from, the cited prior art. For example, claim 1 recites that the stack of filters comprises "a gamma adjustment mask configured to adjust sub-image energy by **mapping a plurality of pixel intensity levels to an addressable range of reactivity** for curing the resin." Claim 1 further recites that the gamma adjustment mask with the recited configuration reduces "aliasing artifacts of curved or smooth surfaces." As agreed in the Examiner Interview, the cited art, such as Saruhashi and Hull, does not teach all of the limitations in claim 1.

Claim 11 includes similar limitations for the set of filters, including limitations on the irradiance mask, the gamma adjustment mask, the warp correction filter, and the edge blending bar. As with claim 1, the cited art, such as Saruhashi and Hull, does not teach all of the limitations in claim 11.

1 36. The USPTO allowed the Asserted Patents based on IA's representations, as
2 evidenced by the Examiner's stated "Reasons for Allowance" for the '301 Patent. *See*
3 Request for Judicial Notice ("RJN"), Ex. B ('301 Patent Prosecution History, Examiner's
4 "Reasons for Allowance"):

5 Application/Control Number: 16/938,298
6 Art Unit: 1742

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7 **DETAILED ACTION**

8 ***Notice of Pre-AIA or AIA Status***

9 The present application, filed on or after March 16, 2013, is being examined under the first
10 inventor to file provisions of the AIA.

11 ***Reasons for Allowance***

12 The following is an examiner's statement of reasons for allowance: Regarding claims 1 and 11,
13 the prior art does not teach the gamma adjustment mask adjusts sub-image energy by mapping a
14 plurality of pixel intensity levels to an addressable range of reactivity for curing the reins, thereby
15 reducing aliasing artifacts of curved or smooth surface, in combination with other features recited in the
16 claim.

17 Any comments considered necessary by applicant must be submitted no later than the payment
18 of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such
19 submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

20 37. Similarly, during prosecution of the '511 Patent, IA argued, in part, that the
21 cited references do not disclose an "irradiance mask that normalizes irradiance." Dkt. No.
22 26-4 at pp. 7-9 (Amendment After Non-Final Office Action dated September 2, 2021).

23 38. The USPTO allowed the '511 Patent based on IA's representations, as
24 evidenced by the Examiner's stated "Reasons for Allowance" for the '511 Patent. *See*
25 Request for Judicial Notice ("RJN"), Ex. C ('511 Patent Prosecution History, Examiner's
26 "Reasons for Allowance"):

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Art Unit: 1742

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DETAILED ACTION

Notice of Pre-AIA or AIA Status

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Reasons for Allowance

The following is an examiner's statement of reasons for allowance: Regarding claim 1, the prior art does not teach an irradiance mask that normalizes irradiance in combination with the other features instantly claimed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

39. For at least the reasons identified above, IA's representations to the USPTO run counter to IA's admission in the Trade Secrets Case that each of the "stack of filters" are well known and conventional technology in the context of 3D DLP multi-projector printers. In the Trade Secrets Case, IA relied on various references and publications to contend that, among other things, the four filters are well known and conventional and that practitioners would be familiar with the concepts of warp correction, irradiance correction and irradiance uniformity correction, edge-blending, blending bars, calibration and geometric alignment, and gamma correction, and would have access to prior art patents and publications that would enable one to perform the claimed features of the four filters. *See, e.g.*, Trade Secrets Case Dkt. No. 509-6 at pp. 15, 22, 26, 29, 32 and 41.

40. For example, in articulating and explaining the well-known and conventional aspect of the four filters, IA referenced U.S. Patent No. 8,666,142 ("the '142 patent" or "Global Filtration patent") and a publication by a former 3DS scientist – Jacobs, Paul Francis. *Rapid prototyping and manufacturing: Fundamentals of Stereolithography*,

1 Society of Manufacturing Engineers, 1992 (the “Jacobs Publication”). Trade Secrets Case
2 Dkt. No. 509-6 at pp. 36-41.

3 41. IA explained, for example, that the ’142 patent discloses a “multi-projector
4 solution for stereolithographic processes that can employ DLP technology” that “includes
5 calibrating to correct geometric distortions of pattern generators (projectors).” IA also
6 explained that the ’142 patent discloses “[g]eometric calibration and correction” and
7 “[m]anagement of overlapping projected regions.” *Id.* at pp. 18-19.

8 42. IA further acknowledged that the “Jacobs [Publication] explains in detail
9 how cure depth of resin is related to the exposure level of the resin to light.” *Id.* at p. 36.
10 Further, IA explains that a “key point” made in the Jacobs’ book is that “cure depth has a
11 gamma-curve relationship to exposure.” *Id.* at p.37. The concept of the cure depth of resin
12 and exposure time are disclosed and claimed in the Asserted Patents. *See, e.g.*, Dkt. No. 1-
13 2, ’301 Patent, Col. 23, lines 25-44 and Claim 1 (“gamma adjustment mask” term).

14 43. Regarding irradiance, IA acknowledged in the Trade Secrets Case that
15 “[e]xtensive irradiance control methods for multi-projector visual imaging systems have
16 been developed and employed for years,” and that “[f]or visual images, irradiance
17 correction and irradiance uniformity correction may be referred to as photometric control
18 or photometric correction.” Trade Secrets Case Dkt. No. 509-6 at pp. 29-30. IA also
19 explained that the “same visible-image irradiance control techniques are applicable to
20 spatial irradiance control of UV-based multi-projector systems used in stereolithographic
21 applications.” *Id.* at pp. 29-30.

22 44. IA’s articulated admission of the well known and conventional nature of the
23 “four filters” anticipates or renders obvious the claimed elements of the four filters in the
24 Asserted Patents, including the ’301 patent term “a gamma adjustment mask configured to
25 adjust sub-image energy by mapping a plurality of pixel intensity levels to an addressable
26 range of reactivity for curing resin of the resin pool, thereby reducing aliasing artifacts of
27 curved or smooth surfaces.” Specifically, the well known and conventional function of

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1 “managing overlapping projected images” and the relationship of light exposure to a resins
2 cure depth of resin, as articulated in IA’s admissions and arguments in the Trade Secrets
3 Case, anticipate or render obvious the “gamma adjustment mask” and other four filter
4 elements of the Asserted Patents.

5 45. Likewise, IA’s admissions that “[e]xtensive irradiance control methods for
6 multi-projector visual imaging systems have been developed and employed for years,” and
7 that “[f]or visual images, irradiance correction and irradiance uniformity correction may
8 be referred to as photometric control or photometric correction” anticipate or render
9 obvious the claim element of the ’511 patent requiring “an irradiance mask that normalizes
10 irradiance.” Trade Secrets Case Dkt. No. 509-6 at pp. 29-30; *see* Dkt. No. 26-4 at pp. 7-9
11 (Amendment After Non-Final Office Action dated September 2, 2021).

12 46. For at least the reasons explained above, upon information and belief, the
13 USPTO would have relied on at least the ’510 patent and/or IA’s admission that the “four
14 filters” are well-known and conventional to reject the claims of the Asserted Patents under
15 35 U.S.C. §§102 or 103.

16 47. During prosecution of the Asserted Patents, IA had a duty of candor and good
17 faith to the USPTO under 37 C.F.R. §1.56, which requires disclosure of all information
18 known to the applicant to be material to patentability.

19 48. Despite this duty to disclose, IA engaged in inequitable conduct by
20 intentionally withholding material information from the USPTO—the ’510 patent and/or
21 its belief that the four filters are well-known and conventional technology—with the
22 specific intent to deceive the USPTO.

23 49. IA’s omission was material because, but for the failure to disclose, the USPTO
24 would not have allowed the claims of the Asserted Patents, or at least would have required
25 amendments or rejections based on the ’510 patent and/or the four filters being well-known
26 and conventional technology.

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1 50. Upon information and belief, IA withheld this information with the specific
2 intent to deceive the USPTO, as evidenced by IA's awareness of the '510 patent's
3 relevance and its deliberate choice not to disclose it or the four filters comprising well-
4 known and convention technology to the USPTO, thereby breaching the duty of candor.

5 51. The aforementioned acts of inequitable conduct, individually and
6 cumulatively, render the Asserted Patents unenforceable, as they involve material
7 omissions and misrepresentations to the USPTO made with deceptive intent.

8 52. The aforementioned acts also render the Asserted Patents unenforceable due
9 to Plaintiff's unclean hands in accusing 3DS of infringing the Asserted Patents after
10 admitting their lack of novelty in the Trade Secrets Case.

11 53. As a result of Plaintiff's inequitable conduct and unclean hands, 3DS has been
12 harmed, including by being subjected to Plaintiff's baseless infringement claims and the
13 costs of defending this litigation.

14 **ELEVENTH DEFENSE**

15 (Unjust Enrichment)

16 54. Plaintiff would be unjustly enriched if allowed to recover on this Complaint.

17 **TWELFTH DEFENSE**

18 (Estoppel)

19 55. Plaintiff is estopped from obtaining any and all of the relief sought against
20 3DS by virtue of its acts, conduct, representations and/or omissions.

21 **THIRTEENTH DEFENSE**

22 (Laches)

23 56. Plaintiff is barred by laches from recovery under the Complaint by reason of
24 their unreasonable delay in notifying 3DS of the claims alleged, and by reason of their
25 unreasonable delay in seeking the recovery requested herein.

26 **FOURTEENTH DEFENSE**

(Speculative Damages)

57. Plaintiff's claims for damages are barred because they are speculative and uncertain, and to the extent that any award would constitute unjust enrichment.

FIFTEENTH DEFENSE

(Limitations on Damages)

58. Plaintiff's claims for relief are barred, in whole or in part, by applicable statutes that limit damage and other relief, including, but not limited to, 35 U.S.C. §§ 286, 287, and 288. Plaintiff is barred under 35 U.S.C. § 298 from recovering damages prior to the date of the filing of the Complaint. Plaintiff is barred by 35 U.S.C. § 288 from recovering costs associated with its action.

SIXTEENTH DEFENSE

(Marking and Damages Limitations)

59. To the extent Plaintiff or its licensees have failed to comply with the marking requirement of 35 U.S.C. § 287, Plaintiff cannot recover any damages for 3DS's alleged infringement prior to the date the Complaint was filed. Further, Plaintiff's claims for damages are statutorily limited or barred by 35 U.S.C. § 286 and/or 35 U.S.C. § 41(c)(2).

SEVENTEENTH DEFENSE

(No Exceptional Case)

60. 3DS has engaged in all of its activities in good faith, and Plaintiff cannot prove that this is an exceptional case justifying an award of attorney's fees against 3DS pursuant to 35 U.S.C. § 285.

EIGHTEENTH DEFENSE

(No Injunctive Relief)

61. Plaintiff is not entitled to injunctive relief because 3DS does not and will not infringe any valid claim of the Asserted Patents; Plaintiff has not and will not suffer irreparable harm because of 3DS's conduct; Plaintiff has an adequate remedy if 3DS's

1 conduct is found to be wrongful (which 3DS denies); and injunctive relief is not supported
2 in a balance of any hardship or public interest.

3 **RESERVATION OF ADDITIONAL DEFENSES**

4 62. 3DS reserves the right to assert additional defenses in the event that discovery
5 or other analysis indicates that additional defenses are appropriate.

6
7 **3DS'S COUNTERCLAIMS**

8 Pursuant to Federal Rule of Civil Procedure 13, Defendants 3D Systems Corporation
9 and 3D Systems, Inc. (collectively "3DS") hereby assert the following counterclaims
10 against Intrepid Automation ("IA") and aver as follows:

11 **NATURE OF THE ACTION**

12 1. 3DS seeks a declaratory judgment of invalidity of United States Patent No.
13 11,014,301 ("the '301 Patent") and 11,338,511 ("the '511 Patent") (collectively, the
14 "Asserted Patents") pursuant to the Patent Laws of the United States, 35 U.S.C. § 1, et seq.,
15 damages, and such other relief as the Court deems just and proper.

16 2. As set forth in the Local Rule 40.1(f) Notice, to be filed contemporaneously
17 with the filing of this Counterclaim, this action is related to a case pending in this District
18 between 3DS and Intrepid Automation and its founders, captioned *3D Systems, Inc. v.*
19 *Wynne et al.*, 3:21-cv-01141-AGS-DDL (hereinafter, the "Trade Secrets Case") and the
20 original patent case captioned *Intrepid Automation, Inc. v. 3D Systems Corporation and*
21 *3D Systems, Inc.*, 3:24-cv-02262-AGS-DDL.

22 **THE PARTIES**

23 3. 3D Systems Corporation is a company incorporated under the laws of
24 Delaware, with a principal place of business at 333 Three D Systems Circle, Rock Hill,
25 South Carolina, 29730. 3D Systems, Inc. is a company incorporated under the laws of
26 California, with a principal place of business at 16550 W Bernardo Drive, Building 5, Suite
27

500, San Diego, California, 92127. 3D Systems, Inc. is a wholly owned subsidiary of 3D Systems Corporation.

4. Upon information and belief, Intrepid Automation is a company incorporated under the laws of Delaware with its principal place of business at 7867 Dunbrook Road A, San Diego, CA 82126.

JURISDICTION AND VENUE

5. If subject matter jurisdiction is proper for IA's claims, this Court has jurisdiction over this Counterclaim pursuant to, and without limitation, 28 U.S.C. §§ 1331, 1338, 1367, 2201, 2202, and the Patent Laws of the United States, 35 U.S.C. § 1 et seq.

6. Intrepid Automation has subjected itself to personal jurisdiction in this District by filing suit against 3DS in this District.

7. Intrepid Automation has consented to venue in this District by filing suit against 3DS in this District.

RELEVANT BACKGROUND

8. 3DS is a pioneer in 3D printing solutions. In 2016, 3DS hired Ben Wynne, Chris Tanner, Jamie Etcheson, Robert Mueller, and Ivan Chousal—each of whom is listed as a co-inventor on the Asserted Patents (the “Alleged Co-Inventors”)—to work with specific DLP multi-projection systems.

9. The Alleged Co-Inventors worked for 3DS for 14 months and then coordinated their departures to start IA using 3DS's trade secrets and confidential information in August 2017.

10. In July 2018, IA, through itself and through the Alleged Co-Inventors, filed a patent application (Serial No. 16/370,337) that eventually matured into U.S. Pat. No. 10,780,640 (“the ‘640 Patent”) which is the parent patent of the Asserted Patents. *See* Dkt. No. 27-6, Ex. A. The ‘640 Patent issued on September 22, 2020 and contains references to 3DS's trade secrets, including certain aspects of 3DS's edge blending and calibration trade secret that includes the use of specific filters, namely edge-blending bars, warp correction,

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1 irradiance and gamma adjustment, among others. Dkt. No. 27-3 (Third Suppl. Response
2 No. 3), Dkt. No. 27-4 (Suppl. Response No. 12).

3 11. On May 25, 2021 and May 24, 2022, the USPTO issued the '301 and '511
4 Patents, respectively. The Asserted Patents are continuations of and claim priority to the
5 '640 Patent.

6 12. The Asserted Patents are unenforceable due to Plaintiff's inequitable conduct
7 before the USPTO during the prosecution of the patent applications that issued into the
8 Asserted Patents. Plaintiff withheld material information from the USPTO, and did so with
9 the specific intent to deceive the USPTO.

10 13. Claim 1 of the '301 Patent is representative of the subject matter of the
11 Asserted Patents, and recites an additive manufacturing system that includes the following:
12 (1) ***an image projection system*** comprising a plurality of image projectors that project a
13 composite image onto a build area within a resin pool, wherein each of the image projectors
14 projects a sub-image onto a portion of the build area, wherein the composite image
15 comprises a plurality of sub-images arranged in an array, and wherein two or more adjacent
16 sub-images in the array overlap at two or more sub-image edges; (2) ***a display subsystem***,
17 wherein the display subsystem controls the image projection system and each of the image
18 projectors to adjust properties and alignment of a position of each sub-image in the array;
19 and (3) ***a stack of filters*** configured to adjust the properties of each sub-image in the array,
20 an irradiance mask configured to normalize irradiance; a gamma adjustment mask
21 configured to adjust sub-image energy by mapping a plurality of pixel intensity levels to
22 an addressable range of reactivity for curing resin of the resin pool, thereby reducing
23 aliasing artifacts of curved or smooth surfaces; a warp correction filter configured to
24 provide geometric correction; and an edge blending bar at one or more sub-image edge.

25 14. During prosecution of the Asserted Patents, IA and the Alleged Co-Inventors
26 had a duty of candor and good faith to the USPTO under 37 C.F.R. §1.56, which requires
27
28

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1 disclosure of all information known to the applicant and inventors to be material to
2 patentability.

3 15. Despite this duty to disclose, IA, through itself and through the Alleged Co-
4 Inventors (who also co-founded IA) engaged in inequitable conduct by intentionally
5 withholding material information from the USPTO with the specific intent to deceive the
6 USPTO into issuing the Asserted Patents.

7 16. For example, the Alleged Co-Inventors of the Asserted Patents were exposed
8 to and worked on multi-projector 3D printing technology during their employment with
9 3DS. Upon joining 3DS in June 2016, for example, the Alleged Co-Inventors were
10 provided an overview of the confidential work done by 3DS on DLP multi-projector 3D
11 printers. The Alleged Co-Inventors were provided with a June 30, 2016 power point
12 presentation titled “6-Pack” (the “6-Pack presentation”), which detailed technical
13 specifications of a multi-projector DLP 3D printer project that was coordinated by 3DS
14 employee Guthrie Cooper. Trade Secrets Case Dkt. No. 552-17. The 6-Pack presentation
15 described a 3D multi-projector printer with 6 digital light projectors and image adjusting
16 features that included “image blending,” the ability to calibrate power across all projectors
17 uniformly, and geometric calibration.

18 17. In addition to the 6-Pack presentation, the Alleged Co-Inventors were
19 provided by 3DS or otherwise had access to numerous documents and technical
20 information at 3DS relating to 3D multi-projector printers and corresponding image
21 processing and functionality, including masked irradiance, power calibration, geometric
22 distortion correction, image blending requirements for pixel overlap, warp correction,
23 blending bars, etc. Dkt. No. 32-8 (3D Systems, Inc.’s Third Supplemental Resp. to Rogs.
24 3 and 4).

25 18. The 6-Pack presentation – which was authored by 3DS employees and
26 contains inventions, concepts or contributions conceived and/or developed prior to the
27 Alleged Co-Inventors employment at 3DS – discloses many of the same or similar
28

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technical details that are disclosed and claimed in the Asserted Patents. For example, the 6-Pack presentation discloses two block diagrams of a 3D multi-projector DLP printers with image adjusting capabilities. One block diagram discloses a 3D printer with multiple projectors and a GPU and PC for performing image adjusting features such as geocalibration, blending, power cal (mask), and rotation, decompression, stitching and chopping. The other block diagram discloses a 3D printer that includes multiple projectors and a GPU and CPU for performing image adjusting features such as geocalibration, blending, power cal (mask), rotation, X Y offset, X Y scaling, pincussion correction, decompression, stitching, cropping, a blending interface and machine vision cam.

19. As an example, the following table presents non-limiting examples of where claim terms of the Asserted Patents (e.g., Claim 1 from the '301 and '511 Patents) find support in the 6-Pack Presentation under a broadest reasonable interpretation standard. Similar support is found for the remaining claims of the '301 Patent and the claims of the '511 Patent.

Claim 1 of '301 Patent	Disclosure in 6-Pack Presentation
An additive manufacturing system, comprising: an image projection system comprising a plurality of image projectors that project a composite image onto a build area within a resin pool, wherein each of the image projectors projects a sub-image onto a portion of the build area, wherein the composite image comprises a plurality of sub-images arranged in an array, and wherein two or more adjacent sub-images	Short and Long Term Block Diagram of 6-Pack Various Projector Layouts with plurality of image projectors, composite image, plurality of sub-images arranged in an array, edge blending bars, and projecting of composite image onto build area with resin pool.

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1	Claim 1 of '301 Patent	Disclosure in 6-Pack Presentation
2	in the array overlap at two or more sub-	
3	image edges;	
4		
5	a display subsystem, wherein the display	In the short term block diagram, reference
6	subsystem controls the image projection	to 6 port HDMI video card with RAM and
7	system and each of the image projectors to	GPU and Video Card PC, both with stated
8	adjust properties and alignment of a	image adjusting functionality.
9	position of each sub-image in the array;	In the long term block diagram, reference
10	and	to 6 Port HDMI video card with RAM and
11		GPU and New PJ600 P104 with RAM,
12		GPU, CPU, and HD, both with stated
13		image adjustment functionality.
14		Reference to “syncing projectors & image
15		blending,” “ability to calibrate power
16		across all projectors uniformly,”
17		“calibration target to perform geo-cal,”
18		“mechanical alignment for uniform
19		blended image” and FW to “sync up
20		Power Cal per projector” and blending of
21		“grayscale masks as well as image”
22		
23	a stack of filters configured to adjust the	In the short term block diagram, reference
24	properties of each sub-image in the array,	to the following image adjusting
25	the stack of filters comprising:	functionality: geocalibration, blending,
26	an irradiance mask configured to	power cal (mask) rotation, decompression,
27	normalize irradiance;	stitching and cropping.

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Claim 1 of '301 Patent	Disclosure in 6-Pack Presentation
a gamma adjustment mask configured to adjust sub-image energy by mapping a plurality of pixel intensity levels to an addressable range of reactivity for curing resin of the resin pool, thereby reducing aliasing artifacts of curved or smooth surfaces; a warp correction filter configured to provide geometric correction; and an edge blending bar at one or more sub-image edges.	In the long term block diagram, reference to the following image adjusting functionality: geocalibration, blending, power cal (mask), rotation, X Y offset, X Y scaling, pincushion correction, decompression, stitching, and cropping. Reference to “syncing projectors & image blending,” “ability to calibrate power across all projectors uniformly,” “calibration target to perform geo-cal,” “mechanical alignment for uniform blended image” and FW to “sync up Power Cal per projector” and blending of “grayscale masks as well as image”

Claim 1 of the '511 Patent	Disclosure in 6-Pack Presentation
A method comprising: a. providing an additive manufacturing system, comprising: an image projection system comprising a plurality of image projectors; and an image display subsystem;	Short and Long Term Block Diagram of 6-Pack Various Projector Layouts with plurality of image projectors, composite image, plurality of sub-images arranged in an array, edge blending bars, and projecting

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b. projecting a composite image onto a build area within a resin pool using the image projection system, wherein:	of composite image onto build area with resin pool. In the short term block diagram, reference to 6 port HDMI video card with RAM and GPU and Video Card PC, both with stated image adjusting functionality. In the long term block diagram, reference to 6 Port HDMI video card with RAM and GPU and New PJ600 P104 with RAM, GPU, CPU, and HD, both with stated image adjustment functionality. Various Projector Layouts with plurality of image projectors, composite image, plurality of sub-images arranged in an array, edge blending bars, and projecting of composite image onto build area with resin pool.
the image projection system is controlled by the image display subsystem; the composite image comprises a plurality of sub-images arranged in an array;	Short and Long Term Block Diagrams of 6-Pack Various Projector Layouts with plurality of image projectors, composite image, plurality of sub-images arranged in an array, edge blending bars, and projecting

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two or more adjacent sub-images in the array overlap at two or more sub-image edges; and each sub-image is projected onto a portion of the build area using one of the plurality of image projectors; and	of composite image onto build area with resin pool.
c. adjusting properties and aligning a position of each sub-image in the array using a set of filters comprising: an irradiance mask that normalizes irradiance; a gamma adjustment mask that adjusts sub-image energy based on a reactivity of resin in the resin pool; a warp correction filter that provides geometric correction; and an edge blending bar at one or more sub-image edges.	In the short term block diagram, reference to the following image adjusting functionality: geocalibration, blending, power cal (mask) rotation, decompression, stitching and cropping. In the long term block diagram, reference to the following image adjusting functionality: geocalibration, blending, power cal (mask), rotation, X Y offset, X Y scaling, pincushion correction, decompression, stitching, and cropping. Reference to “syncing projectors & image blending,” “ability to calibrate power across all projectors uniformly,” “calibration target to perform geo-cal,” “mechanical alignment for uniform blended image” and FW to “sync up Power Cal per projector” and blending of “grayscale masks as well as image”

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20. Upon information and belief, IA the Alleged Co-Inventors incorporated the teachings of the 6-Pack Presentation and other documents they had access to while employed by 3DS into the patent filings that matured into the Asserted Patents.

21. Accordingly, the Asserted Patents incorporate inventions, concepts or contributions made by individuals other than those listed as inventors on the patents (the “Omitted Inventors”), including but not limited to Guthrie Cooper. Many of these inventions, concepts and contributions are set forth in the above-described 6-Pack presentation and other documents that the Alleged Co-Inventors had access to while employed by 3DS, such as, for example, the above-described block diagrams.

22. As reflected above, the Omitted Inventors contributed significantly to the conception of one or more claims in the Asserted Patents, such that they should have been named as inventors (joint or otherwise) under 35 U.S.C. § 116.

23. IA knew of the Omitted Inventors’ contributions during prosecution of the Asserted Patents but failed to disclose this fact to the Patent Office or to correct inventorship. Instead, IA represented to the Patent Office that the Alleged Co-Inventors were the sole inventors of the Asserted Patents, which was a material representation.

24. This misrepresentation and omission regarding inventorship was material because accurate inventorship is essential to patent validity, and failure to name all inventors can render a patent invalid under 35 U.S.C. § 256. But for this inequitable conduct, the USPTO would not have issued the Asserted Patents in their current form. IA made this representation and omission with specific intent to deceive the USPTO, as evidenced by IA’s knowledge of the Omitted Inventors’ roles and the deliberate exclusion of them from the inventor list to facilitate issuance and IA’s exclusive ownership of the Patent.

25. Moreover, IA failed to disclose to the USPTO the existence of U.S. Patent No. 10,773,510 or the application that matured into the ’510 patent (collectively referred to as “the ’510 patent”), as well as other material information during prosecution of the

1 Asserted Patents. *See* Request for Judicial Notice (“RJN”), Ex. A (U.S. Patent No.
2 10,773,510) (the “’510 patent”). The ’510 patent is assigned to 3DS, lists as co-inventors
3 two of the Asserted Patents’ Alleged Co-Inventors, Ben Wynne and Robert Mueller, and
4 relates to work that Wynne and Mueller performed during their time at and for 3DS.

5 26. The ’510 patent discloses and claims systems and methods that are disclosed
6 and claimed in the Asserted Patents. For example, the ’510 patent discloses a 3D multi-
7 projector printer and related image adjusting functionality, such as “correction, calibration,
8 scaling and stitching” image blending and calibration techniques. *See, e.g.*, ’510 patent at
9 Col. 6, lines 9-15, “Correction includes de-warping, and corrections for distortions such
10 as barrel distortion and the keystone effect. Calibration can include compensation for light
11 source 26 output and variation in an optical path length from the light engine 10 to the build
12 plane 24.” *Id.*

13 27. In addition, in its defense of the Trade Secrets Case, IA argued that the filters
14 described in the Asserted Patents are well-known and conventional technology. Trade
15 Secrets Case Dkt. No. 509-6 (Rebuttal Export Report of Will Allen, pp. 11-15 (“**Edge**
16 **blending** has been well-known in multi-projector systems for decades.”); pp. 16-22 (“[T]he
17 use of **blending bars** was known long before the individual Defendants worked at 3DS.”);
18 pp. 26-29 (“**Warp correction** has been well-known in multi-projector systems for many
19 years.”); pp. 29-32 (“Extensive **irradiance control** methods for multi-projector visual
20 imaging systems have been developed and employed for years [cites several references].”;
21 pp. 32-41 (“**Gamma characterization and adjustment**, or compensation, for multi-
22 projector imaging systems, has been well known for decades.”) (emphasis added in all)).

23 28. As an example, the following table presents non-limiting examples of where
24 claim terms of the Asserted Patents (e.g., Claim 1 from the ’301 Patent and ’511 Patent)
25 find support under a broadest reasonable interpretation standard in the ’510 Patent and/or
26 IA’s admissions in the Trade Secrets Case that the “four filters” are well known and
27

conventional technology. Similar support is found for the remaining claims of the '301 and '511 Patents.

Claim 1 of '301 Patent	Disclosure in '510 Patent and/or IA's Admission that "four filters" are Well-Known and Conventional
An additive manufacturing system, comprising: an image projection system comprising a plurality of image projectors that project a composite image onto a build area within a resin pool, wherein each of the image projectors projects a sub-image onto a portion of the build area, wherein the composite image comprises a plurality of sub-images arranged in an array, and wherein two or more adjacent sub-images in the array overlap at two or more sub-image edges;	'510 Patent discloses an image projection system in Figures 7 and 8 and corresponding portions of the specification that includes a plurality of image projectors that project a composite image onto a build area within a resin pool, and each of the projectors projects a sub-image onto a portion of the build area, where the sub-image are arranged in an array, and edge blending bars.
a display subsystem, wherein the display subsystem controls the image projection system and each of the image projectors to adjust properties and alignment of a position of each sub-image in the array; and	'510 Patent discloses a display subsystem in controller 18 and system processor 34 and corresponding portions of the specification.

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Claim 1 of '301 Patent	Disclosure in '510 Patent and/or IA's Admission that "four filters" are Well-Known and Conventional
a stack of filters configured to adjust the properties of each sub-image in the array, the stack of filters comprising: an irradiance mask configured to normalize irradiance; a gamma adjustment mask configured to adjust sub-image energy by mapping a plurality of pixel intensity levels to an addressable range of reactivity for curing resin of the resin pool, thereby reducing aliasing artifacts of curved or smooth surfaces; a warp correction filter configured to provide geometric correction; and an edge blending bar at one or more sub-image edges.	IA argued that the filters described and claimed in the Asserted Patents are well-known and conventional technology. Trade Secrets Case Dkt. No. 509-6 (Rebuttal Export Report of Will Allen, pp. 11-15 ("Edge blending has been well-known in multi-projector systems for decades."); pp. 16-22 ("[T]he use of blending bars was known long before the individual Defendants worked at 3DS."); pp. 26-29 ("Warp correction has been well-known in multi-projector systems for many years."); pp. 29-32 ("Extensive irradiance control methods for multi-projector visual imaging systems have been developed and employed for years [cites several references]."; pp. 32-41 ("Gamma characterization and adjustment, or compensation, for multi-projector imaging systems, has been well known for decades.") (emphasis added in all))

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Claim 1 of the '511 Patent	Disclosure in '510 Patent and/or IA's Admission that "four filters" are Well-Known and Conventional
A method comprising: a. providing an additive manufacturing system, comprising: an image projection system comprising a plurality of image projectors; and an image display subsystem; b. projecting a composite image onto a build area within a resin pool using the image projection system, wherein:	'510 Patent discloses an image projection system in Figures 7 and 8 corresponding portions of the specification that includes a plurality of image projectors that project a composite image onto a build area within a resin pool, and each of the projectors projects a sub-image onto a portion of the build area, where the sub-image are arranged in an array, and edge blending bars. '510 Patent discloses a display subsystem in controller 18 and system processor 34 and corresponding portions of the specification.
the image projection system is controlled by the image display subsystem; the composite image comprises a plurality of sub-images arranged in an array; two or more adjacent sub-images in the array overlap at two or more sub-image edges; and	'510 Patent discloses a composite image with a plurality of sub-images projected using a plurality of image projectors that includes a plurality of image projectors that project a composite image onto a build area within a resin pool, and each of the projectors projects a sub-image onto a

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1	Claim 1 of the '511 Patent	Disclosure in '510 Patent and/or IA's
2		Admission that "four filters" are Well-
3		Known and Conventional
4	each sub-image is projected onto a portion	portion of the build area, where the sub-
5	of the build area using one of the plurality	image are arranged in an array, and edge
6	of image projectors; and	blending bars.
7		
8	c. adjusting properties and aligning a	IA argued that the filters described and
9	position of each sub-image in the array	claimed in the Asserted Patents are well-
10	using a set of filters comprising:	known and conventional technology.
11	an irradiance mask that normalizes	Trade Secrets Case Dkt. No. 509-6
12	irradiance;	(Rebuttal Export Report of Will Allen, pp.
13	a gamma adjustment mask that adjusts	11-15 (" Edge blending has been well-
14	sub-image energy based on a reactivity of	known in multi-projector systems for
15	resin in the resin pool;	decades."); pp. 16-22 ("[T]he use of
16	a warp correction filter that provides	blending bars was known long before the
17	geometric correction; and	individual Defendants worked at 3DS.");
18	an edge blending bar at one or more sub-	pp. 26-29 (" Warp correction has been
19	image edges.	well-known in multi-projector systems for
20		many years."); pp. 29-32 ("Extensive
21		irradiance control methods for multi-
22		projector visual imaging systems have
23		been developed and employed for years
24		[cites several references]."; pp. 32-41
25		("Gamma characterization and
26		adjustment , or compensation, for multi-
27		projector imaging systems, has been well

Claim 1 of the '511 Patent	Disclosure in '510 Patent and/or IA's Admission that "four filters" are Well-Known and Conventional
	known for decades.") (emphasis added in all))

29. During prosecution of the Asserted Patents, IA did not disclose to the Patent Office either the existence of the '510 patent (or the patent application that matured into the '510 patent) or its belief that the four filters are well-known and conventional technology. Both the existence of the '510 patent (or the patent application that matured into the '510 patent) and IA's belief that the four filters are well-known and conventional technology constitute material information to the patentability of the claims in the Asserted Patents because they are relevant prior art under 35 U.S.C. §§ 102 or 103, as they anticipated or rendered obvious one more claims of the Asserted Patents.

30. As further example, as shown below, during prosecution of the '301 Patent, IA argued to the Patent Office that the "stack of filters that are not described by, or obvious from," the cited prior art. Dkt. No. 26-3.

Attorney Docket: INTRP003C1

Applicant traverses the 103 rejections, and claim 1 has been amended for clarity to expedite prosecution. The stack of filters comprises the irradiance mask, the gamma adjustment mask, the warp correction filter, and the edge blending bar. Claim 1 recites limitations for the stack of filters that are not described by, or obvious from, the cited prior art. For example, claim 1 recites that the stack of filters comprises “a gamma adjustment mask configured to adjust sub-image energy by **mapping a plurality of pixel intensity levels to an addressable range of reactivity** for curing the resin.” Claim 1 further recites that the gamma adjustment mask with the recited configuration reduces “aliasing artifacts of curved or smooth surfaces.” As agreed in the Examiner Interview, the cited art, such as Saruhashi and Hull, does not teach all of the limitations in claim 1.

Claim 11 includes similar limitations for the set of filters, including limitations on the irradiance mask, the gamma adjustment mask, the warp correction filter, and the edge blending bar. As with claim 1, the cited art, such as Saruhashi and Hull, does not teach all of the limitations in claim 11.

31. The USPTO allowed the Asserted Patents based on IA’s representations, as evidenced by the Examiner’s stated “Reasons for Allowance” of the ’301 Patent. *See* Request for Judicial Notice (“RJN”), Ex. B (’301 Patent Prosecution History, Examiner’s “Reasons for Allowance”):

Application/Control Number: 16/938,298
Art Unit: 1742

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DETAILED ACTION

Notice of Pre-AIA or AIA Status

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Reasons for Allowance

The following is an examiner's statement of reasons for allowance: Regarding claims 1 and 11, the prior art does not teach the gamma adjustment mask adjusts sub-image energy by mapping a plurality of pixel intensity levels to an addressable range of reactivity for curing the reins, thereby reducing aliasing artifacts of curved or smooth surface, in combination with other features recited in the claim.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

32. Similarly, during prosecution of the '511 Patent, IA argued, in part, that the cited references do not disclose an "irradiance mask that normalizes irradiance." Dkt. No. 26-4 at pp. 7-9 (Amendment After Non-Final Office Action dated September 2, 2021)

33. The USPTO allowed the '511 Patent based on IA's representations, as evidenced by the Examiner's stated "Reasons for Allowance" of the '511 Patent *See* Request for Judicial Notice ("RJN"), Ex. C ('511 Patent Prosecution History, Examiner's "Reasons for Allowance"):

Application/Control Number: 17/301,204
Art Unit: 1742

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DETAILED ACTION

Notice of Pre-AIA or AIA Status

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Reasons for Allowance

The following is an examiner's statement of reasons for allowance: Regarding claim 1, the prior art does not teach an irradiance mask that normalizes irradiance in combination with the other features instantly claimed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

34. For at least the reasons identified above, IA's representations to the USPTO run counter to IA's admission in the Trade Secrets Case that each of the "stack of filters" are well known and conventional technology in the context of 3D DLP multi-projector printers. In the Trade Secrets Case, IA relied on various references and publications to contend that, among other things, the four filters are well known and conventional and that practitioners would be familiar with the concepts of warp correction, irradiance correction and irradiance uniformity correction, edge-blending, blending bars, calibration and geometric alignment, and gamma correction, and would have access to prior art patents and publications that would enable one to perform the claimed features of the four filters. *See, e.g.*, Trade Secrets Case Dkt. No. 509-6 at pp. 15, 22, 26, 29, 32 and 41.

35. For example, in articulating and explaining the well-known and conventional aspect of the four filters, IA referenced U.S. Patent No. 8,666,142 ("the '142 patent" or "Global Filtration patent") and a publication by a former 3DS scientist – Jacobs, Paul Francis. *Rapid prototyping and manufacturing: Fundamentals of Stereolithography*,

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1 Society of Manufacturing Engineers, 1992 (the “Jacobs Publication”). Trade Secrets Case
2 Dkt No. 509-6 at pp. 36-41.

3 36. IA explained, for example, that the ’142 patent discloses a “multi-projector
4 solution for stereolithographic processes that can employ DLP technology” that “includes
5 calibrating to correct geometric distortions of pattern generators (projectors).” IA also
6 explained that the ’142 patent discloses “[g]eometric calibration and correction” and
7 “[m]anagement of overlapping projected regions.” *Id.* at pp. 18-19.

8 37. IA further acknowledged that the “Jacobs [Publication] explains in detail
9 how cure depth of resin is related to the exposure level of the resin to light.” *Id.* at p. 36.
10 Further, IA explains that the a “key point” made in the Jacobs’ book is that “cure depth has
11 a gamma-curve relationship to exposure.” *Id.* at p. 37. The concept of the cure depth of
12 resin and exposure time are disclosed and claimed in the Asserted Patents. *See, e.g.*, Dkt.
13 No. 1-2, ’301 Patent, Col. 23, lines 25-44 and Claim 1 (“gamma adjustment mask” term).

14 38. Regarding irradiance, IA acknowledged in the Trade Secrets Case that
15 “[e]xtensive irradiance control methods for multi-projector visual imaging systems have
16 been developed and employed for years,” and that “[f]or visual images, irradiance
17 correction and irradiance uniformity correction may be referred to as photometric control
18 or photometric correction.” Trade Secrets Case Dkt. No. 509-6 at p. 29. IA also explained
19 that the “same visible-image irradiance control techniques are applicable to spatial
20 irradiance control of UV-based multi-projector systems used in stereolithographic
21 applications.” *Id.* at pp. 29-30.

22 39. IA’s articulated admission of the well-known and conventional nature of the
23 “four filters” anticipates or renders obvious the claimed elements of the four filters in the
24 Asserted Patents, including the ’301 Patent term “a gamma adjustment mask configured to
25 adjust sub-image energy by mapping a plurality of pixel intensity levels to an addressable
26 range of reactivity for curing resin of the resin pool, thereby reducing aliasing artifacts of
27 curved or smooth surfaces.” Specifically, the well-known and conventional function of
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1 “managing overlapping projected images” and the relationship of light exposure to a resins
2 cure depth of resin, as articulated in IA’s admissions and arguments in the Trade Secrets
3 Case, anticipate or render obvious the “gamma adjustment mask” and other four filter
4 elements of the Asserted Patents.

5 40. Likewise, IA’s admissions that “[e]xtensive irradiance control methods for
6 multi-projector visual imaging systems have been developed and employed for years,” and
7 that “[f]or visual images, irradiance correction and irradiance uniformity correction may
8 be referred to as photometric control or photometric correction” anticipate or render
9 obvious the claim element of the ’511 patent requiring “an irradiance mask that normalizes
10 irradiance.” Trade Secrets Case Dkt. No. 509-6 at pp. 29-30; *see* Dkt No. 26-4 at pp. 7-9
11 (Amendment After Non-Final Office Action dated September 2, 2021).

12 41. For at least the reasons explained above, upon information and belief, the
13 USPTO would have relied on at least the ’510 patent and/or IA’s admission that the “four
14 filters” are well-known and conventional to reject the claims of the Asserted Patents under
15 35 U.S.C. §§102 or 103.

16 42. During prosecution of the Asserted Patents, IA had a duty of candor and good
17 faith to the USPTO under 37 C.F.R. §1.56, which requires disclosure of all information
18 known to the applicant to be material to patentability.

19 43. Despite this duty to disclose, IA engaged in equitable conduct by intentionally
20 withholding material information from the USPTO with the specific intent to deceive the
21 USPTO into issuing the Asserted Patents.

22 44. At all times during prosecution of the Asserted Patents, IA knew of the
23 existence and materiality of the ’510 patent, as two of the Alleged Co-Inventors, Wynne
24 and Mueller, are the listed inventors of the ’510 patent, as well as IA’s belief that the four
25 filters of the Asserted Patents comprise well-known and convention technology.

26 45. Despite this knowledge, the Applicant failed to disclose to the Patent Office
27 during the prosecution of the Asserted Patents either the ’510 patent or its belief that the
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four filters are well-known and conventional technology.

46. IA's omission was material because, but for the failure to disclose, the USPTO would not have allowed the claims of the Asserted Patents, or at least would have required amendments or rejections based on the '510 patent or the four filters being well-known and convention technology.

47. Upon information and belief, IA withheld this information with the specific intent to deceive the USPTO, as evidenced by IA's awareness of the '510 patent's relevance and its deliberate choice not to disclose it or the four filters comprising well-known and convention technology to the USPTO, thereby breaching the duty of candor.

48. The aforementioned acts of inequitable conduct, individually and cumulatively, render the Asserted Patents unenforceable, as they involve material omissions and misrepresentations made with deceptive intent.

49. As a result of thus inequitable conduct, 3DS has been harmed, including by being subjected to Plaintiff's baseless infringement claims and the costs of defending this litigation.

COUNT I

DECLARATORY JUDGMENT OF INVALIDITY

OF THE ASSERTED PATENTS

50. 3DS incorporates by reference the preceding paragraphs of 3DS's Counterclaim as though set forth fully herein.

51. 3DS brings this action for declaratory judgment of invalidity of the '301 Patent and the '511 Patent.

52. Plaintiff has alleged that 3DS infringes the '301 Patent and the '511 Patent, and 3DS denies those allegations.

53. The claims of the '301 Patent and the '511 Patent are invalid for failure to meet the conditions for patentability and/or otherwise comply with the requirements of one or more of 35 U.S.C. §§ 101, 102, 103, and 112.

54. There is an actual and justiciable controversy between 3DS and IA regarding the validity of the claims of the '301 Patent and the '511 Patent.

55. The claims of the '301 Patent and the '511 Patent are invalid due to, at least one of, anticipation, obviousness, or indefiniteness, in light of the known prior art including, at least, the following:

(a) U.S. Patent No. 8,666,142 to Shkolnik;

(b) WO 2017/154564 to Sekine with English translation;

(c) U.S. Patent Pub. No. 2017/0102679 to Greene;

(d) EP 3,053,729 A1 to Jorgensen;

(e) Yi *et al*, "Delta DLP 3-D Printing of Large Models," *IEEE Transactions on Automation Science and Engineering*, Vol. 15, No. 3 (DOI: 10.1109/TASE.2017.2751664);

(f) Autodesk Ember 3D Printer system and other printer systems available prior to the priority date of the Asserted Patents; and/or

(g) Common Knowledge including Intrepid Admissions regarding the well-known and conventional nature of the "four filters."

56. 3DS reserves the right to revise the grounds of invalidity, including assert additional grounds of invalidity in the event that discovery or other analysis indicates that additional counterclaims are appropriate.

57. 3DS has prepared and sent IA evidence of how certain of the above prior art, alone or in combination, discloses the features of the claims of the '301 Patent and the '511 Patent, as part of the Petition for Inter Partes Review (IPR), Case No. IPR 2025-01241 which was filed on July 8, 2025, and Petition for IPR, Case No. IPR 2025-01242 which was filed on July 18, 2025, respectively, with the United States Patent and Trademark Office ("USPTO") Patent Trial and Appeal Board ("PTAB"). Dkt. No. 92 (Notice of Filing Inter Partes Review (IPR) Petitions of U.S. Patent Nos. 11,014,301 ('301 Patent) and

1 11,338,511 ('511 Patent)). Those disclosures are incorporated by reference as if included
2 herein.

3 58. As per the previously filed Notice Relating to Inter Partes Review (IPR)
4 Petitions, if the PTAB institutes an IPR proceeding as to any claims of either the '301 or
5 '511 Patents, 3DS will not pursue in this litigation any invalidity arguments that were raised
6 or reasonably could have been raised on those instituted claims in the respective petitions
7 now pending before the PTAB. Dkt. No. 95 (Notice Relating to Inter Partes Review (IPR)
8 Petitions for '301 and '511 Patents).

9 59. A judicial declaration of invalidity is necessary and appropriate in order to
10 resolve this controversy and prevent IA from continuing to allege validity of the '301
11 Patent and the '511 Patent.

12 **COUNT II**

13 **DECLARATION OF INVALIDITY DUE TO IMPROPER INVENTORSHIP**

14 60. 3DS incorporates by reference the preceding paragraphs of 3DS's
15 Counterclaim as though set forth fully herein.

16 61. The claims of the Asserted Patents are invalid for failing to name the actual
17 inventor(s) of the claimed subject matter.

18 62. Chapter 2157 of the Manual of Patent Examining Procedure states: "Although
19 the AIA eliminated pre-AIA 35 U.S.C. 102(f), the patent laws still require the naming of
20 the inventor of the claimed subject matter. . . . In the rare situation where it is clear that the
21 application does not name the correct inventorship and the applicant has not filed a request
22 to correct inventorship under 37 CFR 1.48, Office personnel should reject the claims under
23 35 U.S.C. 101 and 35 U.S.C. 115."

24 63. 35 U.S.C. s. 101 states: "Whoever invents or discovers any new and useful
25 process, machine, manufacture, or composition of matter, or any new and useful
26 improvement thereof, may obtain a patent therefor, subject to the conditions and
27 requirements of this title."

64. 35 U.S.C. s. 115(a) states: “An application for patent that is filed under section 111(a) . . . shall include, or be amended to include, the name of the inventor for any invention claimed in the application.”

65. The Asserted Patents fail to meet these statutory requirements because, to the extent it claims any inventive subject matter, such invention was not made by the only named inventors.

66. Because the Asserted Patents fail to include the actual inventors of the claimed subject matter, the Asserted Patents are invalid for improper inventorship.

COUNT III

DECLARATION OF UNENFORCEABILITY DUE TO INEQUITABLE CONDUCT

67. 3DS incorporates by reference the preceding paragraphs of 3DS’s Counterclaim as though set forth fully herein.

68. As a result of the acts described in the foregoing paragraphs, the claims of the ’301 Patent and the ’511 Patent are unenforceable due to inequitable conduct committed by IA during prosecution of the respective patent applications before the Patent Office.

69. A judicial declaration of unenforceability is necessary and appropriate in order to prevent IA from continuing to allege infringement and validity of the ’301 Patent and the ’511 Patent.

EXCEPTIONAL CASE

This is an exceptional case under 35 U.S.C. § 285 at least due to 3DS’s assertion of unenforceable patents obtained through inequitable conduct, entitling 3DS to recovery from IA its reasonable attorney’s fees, costs and expenses incurred in connection with this action.

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DEMAND FOR JURY TRIAL

Pursuant to Federal Rules of Civil Procedure 38(b), 3DS demands a jury trial on all issues so triable.

PRAYER FOR RELIEF

WHEREFORE, having filed its answer and affirmative defenses to Plaintiff's Complaint, 3DS requests:

- (a) That Plaintiff to take nothing and its Complaint be dismissed with prejudice;
- (b) The Court deny any injunctive relief in favor of Plaintiff and against 3DS;
- (c) That the Court declare that all asserted claims of the Asserted Patents are invalid and/or unenforceable for failure to meet the conditions of patentability and/or otherwise comply with the requirements of 35 U.S.C. §§ 101, 102, 103, and/or 112;
- (d) That the Court declare the Asserted Patents are invalid for failure to identify the proper inventors;
- (e) That the Court declare that all asserted claims of the Asserted Patents are unenforceable due to inequitable conduct by the Alleged Co-Inventors during prosecution of the Asserted Patents and/or Plaintiff's unclean hands in filing the lawsuit;
- (f) That the Court order that 3DS is the prevailing party and that this is an exceptional case, awarding 3DS its reasonable attorney fees under 35 U.S.C. § 285 and all other applicable statutes, rules, and common law;
- (g) That 3DS recover the costs of suit incurred as otherwise provided by law;
- (h) That 3DS be awarded post-judgment interest on the foregoing amounts at the maximum rate permitted by law; and
- (i) That 3DS be awarded such other and further relief as the Court deems just and proper.

1 DATED: August 19, 2025

HUNTON ANDREWS KURTH LLP

2
3 By: /s/ Emily Burkhardt Vicente

4 Emily Burkhardt Vicente

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