

In the Matter of

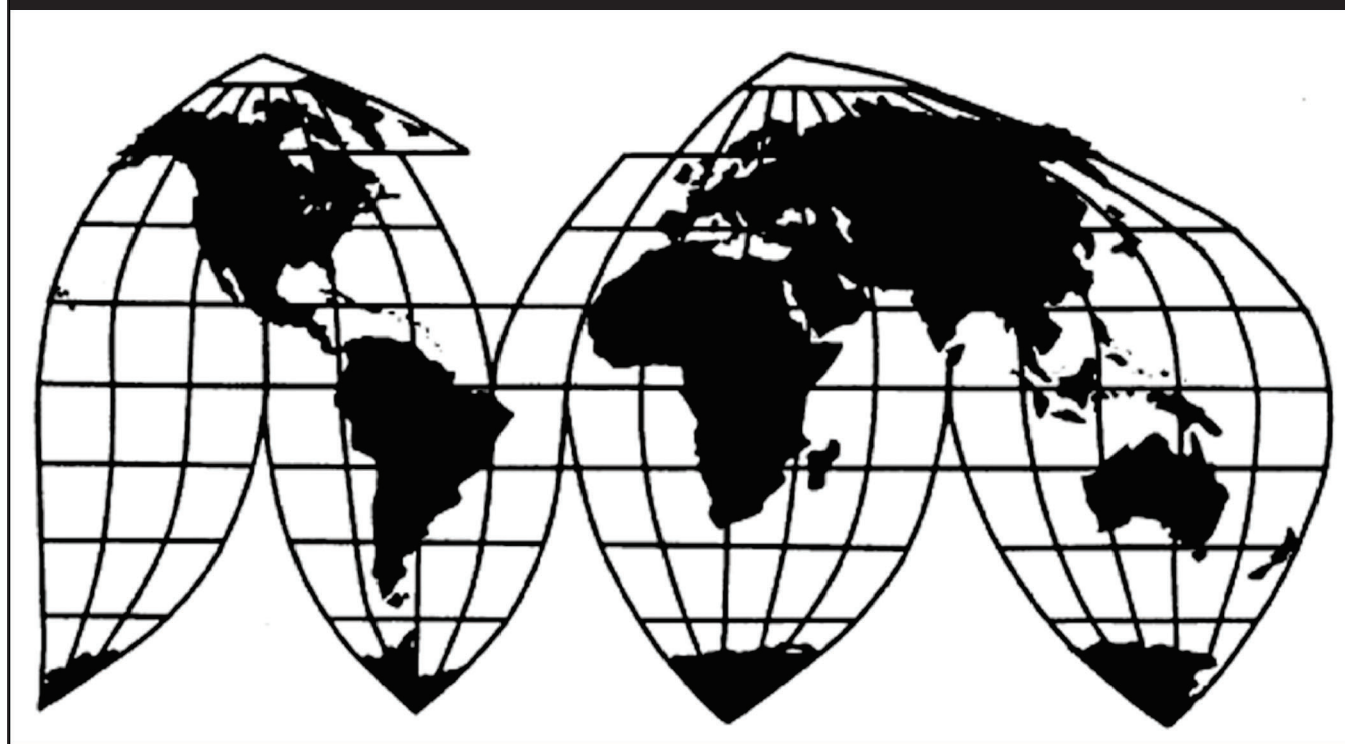
**CERTAIN THREE-DIMENSIONAL CINEMA
SYSTEMS AND COMPONENTS THEREOF**

337-TA-939

Publication 4908

June 2019

U.S. International Trade Commission



Washington, DC 20436

U.S. International Trade Commission

COMMISSIONERS

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Scott Kieff, Commissioner
Rhonda Schmidlein, Commissioner



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Washington, DC 20436

U.S. International Trade Commission

Washington, DC 20436
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In the Matter of

CERTAIN THREE-DIMENSIONAL CINEMA SYSTEMS AND COMPONENTS THEREOF

337-TA-939



UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C.

In the Matter of

**CERTAIN THREE-DIMENSIONAL
CINEMA SYSTEMS AND
COMPONENTS THEREOF**

Investigation No. 337-TA-939

**NOTICE OF THE COMMISSION'S FINAL DETERMINATION FINDING A
VIOLATION OF SECTION 337; ISSUANCE OF A LIMITED EXCLUSION ORDER
AND CEASE AND DESIST ORDERS; TERMINATION OF THE INVESTIGATION**

AGENCY: U.S. International Trade Commission.

ACTION: Notice.

SUMMARY: Notice is hereby given that the U.S. International Trade Commission has found a violation of section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337, in this investigation. The Commission has issued a limited exclusion order prohibiting the importation of certain three-dimensional cinema systems, and components thereof, that infringe certain claims of the patents at issue. The Commission has also issued cease and desist orders directed to the two respondents. The remedial orders are suspended as to certain patent claims pending final resolution of a validity issue. The investigation is terminated.

FOR FURTHER INFORMATION CONTACT: Lucy Grace D. Noyola, Office of the General Counsel, U.S. International Trade Commission, 500 E Street, S.W., Washington, D.C. 20436, telephone 202-205-3438. Copies of non-confidential documents filed in connection with this investigation are or will be available for inspection during official business hours (8:45 a.m. to 5:15 p.m.) in the Office of the Secretary, U.S. International Trade Commission, 500 E Street, S.W., Washington, D.C. 20436, telephone 202-205-2000. General information concerning the Commission may also be obtained by accessing its Internet server (<http://www.usitc.gov>). The public record for this investigation may be viewed on the Commission's electronic docket (EDIS) at <http://edis.usitc.gov>. Hearing-impaired persons are advised that information on this matter can be obtained by contacting the Commission's TDD terminal on 202-205-1810.

SUPPLEMENTARY INFORMATION: The Commission instituted this investigation on December 12, 2014, based on a complaint filed by RealD, Inc. of Beverly Hills, California ("RealD"). 79 *Fed. Reg.* 73902-03 (Dec. 12, 2014). The complaint alleges violations of section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337, in the importation into the United States, the sale for importation, and the sale within the United States after importation of certain three-dimensional cinema systems, and components thereof, that infringe certain claims of U.S. Patent Nos. 7,905,602 ("the '602 patent"); 8,220,934 ("the '934 patent"); 7,857,455 ("the '455

patent”); and 7,959,296 (“the ’296 patent”). *Id.* at 73902. The notice of investigation named as respondents MasterImage 3D, Inc. of Sherman Oaks, California, and MasterImage 3D Asia, LLC of Seoul, Republic of Korea (collectively, “MasterImage”). *Id.* at 73903. The Office of Unfair Import Investigations was not named as a party to the investigation. *Id.*

On July 23, 2015, the Commission terminated the investigation as to various of the asserted claims and the ’602 patent in its entirety. Notice (July 23, 2015) (determining not to review Order No. 6 (July 2, 2015)); Notice (Aug. 20, 2015) (determining not to review Order No. 7 (Aug. 3, 2015)).

On September 25, 2015, the Commission determined on summary determination that RealD satisfied the economic prong of the domestic industry requirement through its significant investment in plant, significant investment in labor, and substantial investment in engineering, research, and development. Notice (Sept. 25, 2015) (determining to review in part Order No. 9 (Aug. 20, 2015)). The Commission, however, reversed the summary determination with respect to RealD’s investment in equipment. *Id.*

On December 16, 2015, the presiding administrative law judge (“ALJ”) issued a final initial determination (“ID”) finding a violation of section 337 with respect to the three remaining asserted patents. The ALJ found that the asserted claims of the ’455, ’296, and ’934 patents are infringed and not invalid or unenforceable. The ALJ found that the technical prong of the domestic industry requirement was satisfied for the ’455, ’296, and ’934 patents. The ALJ also issued a Recommended Determination on Remedy and Bonding (“RD”), recommending that a limited exclusion order and cease and desist orders should issue and that a bond of 100 percent should be imposed during the period of Presidential review.

On December 29, 2015, MasterImage filed a petition for review challenging various findings in the final ID. On January 6, 2016, RealD filed a response to MasterImage’s petition. On January 15, 2016, and January 19, 2016, MasterImage and RealD respectively filed post-RD statements on the public interest under Commission Rule 210.50(a)(4). The Commission did not receive any post-RD public interest comments from the public in response to the Commission notice issued on December 22, 2015. 80 *Fed. Reg.* 80795 (Dec. 28, 2015).

On February 16, 2016, the Commission determined to review the final ID in part and requested additional briefing from the parties on certain issues. 81 *Fed. Reg.* at 8744-45. Specifically, the Commission determined to review (1) the ID’s construction of the “uniformly modulate” limitation recited in claims 1 and 17 of the ’455 patent; (2) the ID’s infringement findings with respect to the asserted claims of the ’455 patent; (3) the ID’s findings on validity of the asserted claims of the ’455 patent; (4) the ID’s finding of proper inventorship of the ’296 patent; (5) the ID’s findings on validity of the asserted claims of the ’934 patent; and (6) the ID’s finding regarding the technical prong of the domestic industry requirement with respect to the ’455 patent. *Id.* at 8745. The Commission also solicited briefing from the parties and the public on the issues of remedy, the public interest, and bonding. *Id.*

On March 1, 2016, the parties filed initial written submissions addressing the Commission’s questions and the issues of remedy, the public interest, and bonding. On March 11, 2016, the

parties filed response briefs. No comments were received from the public.

On April 18, 2016, the Commission requested additional briefing on the effect of a Final Written Decision issued by the Patent Trial and Appeal Board of the U.S. Patent and Trademark Office (“PTAB”) on April 14, 2016, finding certain claims of the ’934 patent unpatentable, on the Commission’s final determination. 81 *Fed. Reg.* 23749-50 (Apr. 22, 2016). On April 26, 2016, the parties filed initial written submissions addressing the Commission’s question. On May 3, 2016, the parties filed response briefs.

Having examined the record of this investigation, including the final ID and the parties’ submissions, the Commission has determined that RealD has proven a violation of section 337 based on infringement of claims 1-3, 9-11, 13, 15, 17-19, and 21 of the ’455 patent; claims 1, 2, 7, 8, 11, and 12 of the ’296 patent; and claims 1, 6, and 11 of the ’934 patent. The Commission has determined to modify the ALJ’s construction of the “uniformly modulate” limitation recited in claims 1 and 17 of the ’455 patent. Under the modified construction, the Commission has determined that RealD has proven that the accused MasterImage Horizon 3D, 3D S, M, Rv1, and Rv2 products infringe the asserted claims of the ’455 patent and that the technical prong of the domestic industry requirement is satisfied with respect to that patent. The Commission has determined that the asserted claims of the ’455 patent are not invalid under 35 U.S.C. §§ 102(e), 102(g), 103, and 112, ¶¶ 1 and 2. The Commission has determined that the asserted claims of the ’296 patent are not invalid under 35 U.S.C. § 116 for improper inventorship. The Commission has also determined that the asserted claims of the ’934 patent are not invalid under 35 U.S.C. §§ 102(g) and 103.

The Commission has determined the appropriate remedy is a limited exclusion order prohibiting the importation of certain three-dimensional cinema systems, and components thereof, that infringe the asserted claims of the ’455, ’296, and ’934 patents and cease and desist orders directed against MasterImage. The Commission has determined the public interest factors enumerated in section 337(d)(1) and (f)(1) do not preclude issuance of the limited exclusion order or cease and desist orders.

In view of the PTAB’s Final Written Decision finding certain claims of the ’934 patent unpatentable, the Commission has determined to suspend the enforcement of the limited exclusion order and cease and desist orders as to claims 1, 6, and 11 of the ’934 patent pending final resolution of the PTAB’s Final Written Decision. *See* 35 U.S.C. § 318(b).

The Commission has also determined to set a bond in the amount of 100 percent of the entered value of excluded products imported during the period of Presidential review (19 U.S.C. § 1337(j)). The Commission’s orders and opinion were delivered to the President and to the United States Trade Representative on the day of their issuance.

The authority for the Commission's determination is contained in section 337 of the Tariff Act of 1930, as amended (19 U.S.C. § 1337), and in Part 210 of the Commission's Rules of Practice and Procedure (19 C.F.R. Part 210).

By order of the Commission.

A handwritten signature in black ink, appearing to read "Lisa R. Barton". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

Lisa R. Barton
Secretary to the Commission

Issued: July 21, 2016

PUBLIC CERTIFICATE OF SERVICE

I, Lisa R. Barton, hereby certify that the attached **NOTICE** has been served on the Office of Unfair Import Investigations, and the following parties, as indicated, on **July 21, 2016**.



Lisa R. Barton, Secretary
U.S. International Trade Commission
500 E Street, SW, Room 112
Washington, DC 20436

On Behalf of Complainant RealD Inc.:

Kevin M. O'Brien, Esq.
BAKER & MCKENZIE LLP
815 Connecticut Avenue, NW
Washington, DC 20006

- Via Hand Delivery
- Via Express Delivery
- Via First Class Mail
- Other: _____

**On Behalf of Respondents MasterImage 3D, Inc. and
MasterImage 3D Asia, LLC:**

Kecia J. Reynolds, Esq.
PILLSBURY WINTHROP SHAW PITTMAN LLP
1650 Tysons Blvd., 14th Floor
McLean, VA 22102

- Via Hand Delivery
- Via Express Delivery
- Via First Class Mail
- Other: _____

UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C.

In the Matter of

**CERTAIN THREE-DIMENSIONAL
CINEMA SYSTEMS AND
COMPONENTS THEREOF**

Investigation No. 337-TA-939

LIMITED EXCLUSION ORDER

The Commission found that there is a violation of section 337 of the Tariff Act of 1930, as amended (19 U.S.C. § 1337), in the unlawful importation, sale for importation, and sale after importation by MasterImage 3D, Inc. of Sherman Oaks, California, and MasterImage 3D Asia, LLC of Seoul, Republic of Korea (collectively, “Respondents”) of certain three-dimensional cinema systems, and components thereof, by reason of infringement of claims 1-3, 9-11, 13, 15, 17-19, and 21 of U.S. Patent No. 7,857,455 (“the ’455 patent”); claims 1, 2, 7, 8, 11, and 12 of U.S. Patent No. 7,959,296 (“the ’296 patent”); and claims 1, 6, and 11 of U.S. Patent No. 8,220,934 (“the ’934 patent”).

The Commission has determined that the appropriate form of relief is a limited exclusion order prohibiting the unlicensed entry of covered three-dimensional cinema systems, and components thereof, manufactured abroad by or on behalf of, or imported by or on behalf of, Respondents or any of their affiliated companies, parents, subsidiaries, or other related business entities, or their successors or assigns.

The Commission has also determined that the public interest factors enumerated in 19 U.S.C. § 1337(d)(1) do not preclude the issuance of the limited exclusion order.

The Commission has further determined to set a bond during the period of Presidential review in the amount of 100 percent of the entered value of the three-dimensional cinema systems, and components thereof, that are subject to this Order.

Accordingly, the Commission hereby **ORDERS** that:

1. Three-dimensional cinema systems, and components thereof, that are covered by one or more of claims 1-3, 9-11, 13, 15, 17-19, and 21 of the '455 patent; claims 1, 2, 7, 8, 11, and 12 of the '296 patent; and claims 1, 6, and 11 of the '934 patent and that are manufactured abroad by or on behalf of, or imported by or on behalf of, Respondents or any of their affiliated companies, parents, subsidiaries, or other related business entities, or its successors or assigns, are excluded from entry for consumption into the United States, entry for consumption from a foreign trade zone, or withdrawal from a warehouse for consumption, for the remaining term of the patent, except under license of the patent owner or as provided by law.

2. Notwithstanding paragraph 1 of this Order, the aforementioned three-dimensional cinema systems, and components thereof, are entitled to entry into the United States for consumption, entry for consumption from a foreign-trade zone, or withdrawal from a warehouse for consumption under bond in the amount of 100 percent of the entered value of such articles pursuant to subsection (j) of section 337 (19 U.S.C. § 1337(j)) and the Presidential Memorandum for the United States Trade Representative of July 21, 2005 (*70 Fed. Reg.* 43,251), from the day after this Order is received by the United States Trade Representative until such time as the United States Trade Representative notifies the Commission that this Order is approved or disapproved but, in any event, not later than sixty days after the date of receipt of this Order.

3. At the discretion of U.S. Customs and Border Protection and pursuant to procedures that it establishes, persons seeking to import three-dimensional cinema systems, and components thereof, that are potentially subject to this Order may be required to certify that they

are familiar with the terms of this Order, that they have made appropriate inquiry, and thereupon state that, to the best of their knowledge and belief, (1) the products being imported are not excluded from entry under paragraph 1 of this Order or (2) unassembled LC modulator components are being imported only for use in MasterImage's Wave 3D product and not for use in infringing products. At its discretion, U.S. Customs and Border Protection may require persons who have provided the certification described in this paragraph to furnish such records or analyses as are necessary to substantiate the certification.

4. In accordance with 19 U.S.C. § 1337(l), the provisions of this Order shall not apply to certain three-dimensional cinema systems, and components thereof, imported by and for the use of the United States, or imported for, and to be used for, the United States with the authorization or consent of the Government.

5. The enforcement of the provisions of this Order as to claims 1, 6, and 11 of the '934 patent is suspended pending final resolution of a Final Written Decision issued by the Patent Trial and Appeal Board of the U.S. Patent and Trademark Office on April 14, 2016, finding certain claims of the '934 patent unpatentable. *See* 35 U.S.C. § 318(b).

6. The Commission may modify this Order in accordance with the procedures described in section 210.76 of the Commission's Rules of Practice and Procedure (19 C.F.R. § 210.76).

7. The Secretary shall serve copies of this Order upon each party of record in this investigation and upon the Department of Health and Human Services, the Department of Justice, the Federal Trade Commission, and U.S. Customs and Border Protection.

8. Notice of this Order shall be published in the *Federal Register*.

By order of the Commission.

A handwritten signature in black ink, appearing to read 'Lisa R. Barton', with a stylized flourish at the end.

Lisa R. Barton
Secretary to the Commission

Issued: July 21, 2016

PUBLIC CERTIFICATE OF SERVICE

I, Lisa R. Barton, hereby certify that the attached **ORDER** has been served on the Office of Unfair Import Investigations, and the following parties, as indicated, on **July 21, 2016**.



Lisa R. Barton, Secretary
U.S. International Trade Commission
500 E Street, SW, Room 112
Washington, DC 20436

On Behalf of Complainant RealD Inc.:

Kevin M. O'Brien, Esq.
BAKER & MCKENZIE LLP
815 Connecticut Avenue, NW
Washington, DC 20006

- Via Hand Delivery
- Via Express Delivery
- Via First Class Mail
- Other: _____

**On Behalf of Respondents MasterImage 3D, Inc. and
MasterImage 3D Asia, LLC:**

Kecia J. Reynolds, Esq.
PILLSBURY WINTHROP SHAW PITTMAN LLP
1650 Tysons Blvd., 14th Floor
McLean, VA 22102

- Via Hand Delivery
- Via Express Delivery
- Via First Class Mail
- Other: _____

**UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C.**

In the Matter of

**CERTAIN THREE-DIMENSIONAL
CINEMA SYSTEMS AND
COMPONENTS THEREOF**

Investigation No. 337-TA-939

CEASE AND DESIST ORDER

IT IS HEREBY ORDERED THAT MasterImage 3D Asia, LLC cease and desist from conducting any of the following activities in the United States: importing, selling, marketing, advertising, distributing, transferring (except for exportation), and soliciting U.S. agents or distributors for three-dimensional cinema systems, and components thereof, that are covered by one or more of claims 1-3, 9-11, 13, 15, 17-19, and 21 of U.S. Patent No. 7,857,455 (“the ‘455 patent”); claims 1, 2, 7, 8, 11, and 12 of U.S. Patent No. 7,959,296 (“the ‘296 patent”); and claims 1, 6, and 11 of U.S. Patent No. 8,220,934 (“the ‘934 patent”) in violation of section 337 of the Tariff Act of 1930, as amended (19 U.S.C. § 1337).

**I.
Definitions**

As used in this Order:

- (A) “Commission” shall mean the United States International Trade Commission.
- (B) “Complainant” shall mean RealD, Inc. of Beverly Hills, California.
- (C) “Respondent” shall mean MasterImage 3D Asia, LLC, BYC Highcity Building A, 22nd Floor, 131, Gasan digital 1-ro, Gasan-don, Geumcheon-gu, Seoul 153–803, Republic of Korea.

(D) "Person" shall mean an individual, or any non-governmental partnership, firm, association, corporation, or other legal or business entity other than Respondent or its majority-owned or controlled subsidiaries, successors, or assigns.

(E) "United States" shall mean the fifty States, the District of Columbia, and Puerto Rico.

(F) The terms "import" and "importation" refer to importation for entry for consumption under the Customs laws of the United States.

(G) The term "covered products" shall mean three-dimensional cinema systems, and components thereof, covered by one or more of claims 1-3, 9-11, 13, 15, 17-19, and 21 of the '455 patent; claims 1, 2, 7, 8, 11, and 12 of the '296 patent; and claims 1, 6, and 11 of the '934 patent.

II. Applicability

The provisions of this Cease and Desist Order shall apply to Respondent and to any of its principals, stockholders, officers, directors, employees, agents, distributors, controlled (whether by stock ownership or otherwise) and majority-owned business entities, successors, and assigns, and to each of them, insofar as they are engaging in conduct prohibited by section III, *infra*, for, with, or otherwise on behalf of Respondent.

III. Conduct Prohibited

The following conduct of Respondent in the United States is prohibited by this Order.

For the remaining terms of the '455, '296, and '934 patents, Respondent shall not:

- (A) import or sell for importation into the United States covered products;
- (B) market, distribute, sell, or otherwise transfer (except for exportation) in the United States imported covered products;

- (C) advertise imported covered products;
- (D) solicit U.S. agents or distributors for imported covered products; or
- (E) aid or abet other entities in the importation, sale for importation, sale after

importation, transfer, or distribution of covered products.

IV. Conduct Permitted

Notwithstanding any other provision of this Order, specific conduct otherwise prohibited by the terms of this Order shall be permitted if: (1) in a written instrument, the owner of the '455, '296, and '934 patents licenses or authorizes such specific conduct, (2) such specific conduct is related to the importation or sale of covered products by or for the United States, or (3) such specific conduct is related to an unassembled LC modulator component that has been certified as imported only for use in Respondent's Wave 3D product and not for use in covered products.

V. Reporting

For purposes of this requirement, the reporting periods shall commence on January 1 of each year and shall end on the subsequent December 31. The first report required under this section shall cover the period from the date of issuance of this Order through December 31, 2016. This reporting requirement shall continue in force until such time as Respondent has truthfully reported, in two consecutive timely filed reports, that they have no inventory of covered products in the United States.

Within thirty (30) days of the last day of the reporting period, Respondent shall report to the Commission (a) the quantity in units and the value in dollars of covered products that it has (i) imported and/or (ii) sold in the United States after importation during the reporting period,

and (b) the quantity in units and value in dollars of reported covered products that remain in inventory in the United States at the end of the reporting period.

When filing written submissions, Respondent must file the original document electronically on or before the deadlines stated above and submit eight (8) true paper copies to the Office of the Secretary by noon the next day pursuant to section 210.4(f) of the Commission's Rules of Practice and Procedure (19 C.F.R. § 210.4(f)). Submissions should refer to the investigation number ("Inv. No. 337-TA-939") in a prominent place on the cover pages and/or the first page. (*See Handbook for Electronic Filing Procedures*, http://www.usitc.gov/secretary/fed_reg_notices/rules/handbook_on_electronic_filing.pdf). Persons with questions regarding filing should contact the Secretary (202-205-2000). If Respondent desires to submit a document to the Commission in confidence, it must file the original and a public version of the original with the Office of the Secretary and must serve a copy of the confidential version on Complainant's counsel.¹

Any failure to make the required report or the filing of any false or inaccurate report shall constitute a violation of this Order, and the submission of a false or inaccurate report may be referred to the U.S. Department of Justice as a possible criminal violation of 18 U.S.C. § 1001.

VI. Recordkeeping and Inspection

(A) For the purpose of securing compliance with this Order, Respondent shall retain any and all records relating to the sale, offer for sale, marketing, or distribution in the United States of covered products, made and received in the usual and ordinary course of business,

¹ Complainant must file a letter with the Secretary identifying the attorney to receive reports and bond information associated with this Order. The designated attorney must be on the protective order entered in the investigation.

whether in detail or in summary form, for a period of three (3) years from the close of the fiscal year to which they pertain.

(B) For the purposes of determining or securing compliance with this Order and for no other purpose, subject to any privilege recognized by the federal courts of the United States, and upon reasonable written notice by the Commission or its staff, duly authorized representatives of the Commission shall be permitted access and the right to inspect and copy, in Respondent's principal offices during office hours, and in the presence of counsel or other representatives if Respondent so chooses, all books, ledgers, accounts, correspondence, memoranda, and other records and documents, in detail and in summary form, that must be retained under subparagraph VI(A) of this Order.

VII. Service of Cease and Desist Order

Respondent is ordered and directed to:

(A) Serve, within fifteen days after the effective date of this Order, a copy of this Order upon each of its respective officers, directors, managing agents, agents, and employees who have any responsibility for the importation, marketing, distribution, or sale of imported covered products in the United States;

(B) Serve, within fifteen days after the succession of any persons referred to in subparagraph VII(A) of this Order, a copy of the Order upon each successor; and

(C) Maintain such records as will show the name, title, and address of each person upon whom the Order has been served, as described in subparagraphs VII(A) and VII(B) of this Order, together with the date on which service was made.

The obligations set forth in subparagraphs VII(B) and VII(C) shall remain in effect until the expiration dates of the '455, '296, and '934 patents.

VIII.
Confidentiality

Any request for confidential treatment of information obtained by the Commission pursuant to Section V and VI of this Order should be made in accordance with section 201.6 of the Commission's Rules of Practice and Procedure (19 C.F.R. § 201.6). For all reports for which confidential treatment is sought, Respondent must provide a public version of such report with confidential information redacted.

IX.
Enforcement

Violation of this Order may result in any of the actions specified in section 210.75 of the Commission's Rules of Practice and Procedure (19 C.F.R. § 210.75), including an action for civil penalties under section 337(f) of the Tariff Act of 1930 (19 U.S.C. § 1337(f)), as well as any other action that the Commission deems appropriate. In determining whether Respondent is in violation of this Order, the Commission may infer facts adverse to Respondent if it fails to provide adequate or timely information.

The enforcement of the provisions of this Order as to claims 1, 6, and 11 of the '934 patent is suspended pending final resolution of a Final Written Decision issued by the Patent Trial and Appeal Board of the U.S. Patent and Trademark Office on April 14, 2016, finding certain claims of the '934 patent unpatentable. *See* 35 U.S.C. § 318(b).

X.
Modification

The Commission may amend this Order on its own motion or in accordance with the procedure described in section 210.76 of the Commission's Rules of Practice and Procedure (19 C.F.R. § 210.76).

XI. Bonding

The conduct prohibited by section III of this Order may be continued during the sixty (60) day period in which this Order is under review by the United States Trade Representative, as delegated by the President (70 *Fed. Reg.* 43,251 (Jul. 21, 2005)), subject to Respondent posting of a bond in the amount of 100 percent of the entered value of the covered products. This bond provision does not apply to conduct that is otherwise permitted by Section IV of this Order. Covered products imported on or after the date of issuance of this Order are subject to the entry bond as set forth in the exclusion order issued by the Commission, and are not subject to this bond provision.

The bond is to be posted in accordance with the procedures established by the Commission for the posting of bonds by Complainant in connection with the issuance of temporary exclusion orders. (*See* 19 C.F.R. § 210.68). The bond and any accompanying documentation are to be provided to and approved by the Commission prior to the commencement of conduct that is otherwise prohibited by Section III of this Order. Upon the Secretary's acceptance of the bond, (a) the Secretary will serve an acceptance letter on all parties, and (b) Respondent must serve a copy of the bond and any accompanying documentation on Complainant's counsel.²

The bond is to be forfeited in the event that the United States Trade Representative approves this Order (or does not disapprove it within the review period), unless (i) the U.S. Court of Appeals for the Federal Circuit, in a final judgment, reverses any Commission final determination and order as to Respondent on appeal or (ii) Respondent exports or destroys the

² *See* note 1 above.

products subject to this bond and provides certification to that effect that is satisfactory to the Commission.

The bond is to be released in the event the United States Trade Representative disapproves this Order and no subsequent order is issued by the Commission and approved (or not disapproved) by the United States Trade Representative, upon service on Respondent of an order issued by the Commission based upon application therefore made by Respondent to the Commission.

By order of the Commission.

A handwritten signature in black ink, appearing to read 'Lisa R. Barton', written in a cursive style.

Lisa R. Barton
Secretary to the Commission

Issued: July 21, 2016

PUBLIC CERTIFICATE OF SERVICE

I, Lisa R. Barton, hereby certify that the attached **ORDER** has been served on the Office of Unfair Import Investigations, and the following parties, as indicated, on **July 21, 2016**.



Lisa R. Barton, Secretary
U.S. International Trade Commission
500 E Street, SW, Room 112
Washington, DC 20436

On Behalf of Complainant RealD Inc.:

Kevin M. O'Brien, Esq.
BAKER & MCKENZIE LLP
815 Connecticut Avenue, NW
Washington, DC 20006

- Via Hand Delivery
 Via Express Delivery
 Via First Class Mail
 Other: _____

**On Behalf of Respondents MasterImage 3D, Inc. and
MasterImage 3D Asia, LLC:**

Kecia J. Reynolds, Esq.
PILLSBURY WINTHROP SHAW PITTMAN LLP
1650 Tysons Blvd., 14th Floor
McLean, VA 22102

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UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C.

In the Matter of

**CERTAIN THREE-DIMENSIONAL
CINEMA SYSTEMS AND
COMPONENTS THEREOF**

Investigation No. 337-TA-939

CEASE AND DESIST ORDER

IT IS HEREBY ORDERED THAT MasterImage 3D, Inc. cease and desist from conducting any of the following activities in the United States: importing, selling, marketing, advertising, distributing, transferring (except for exportation), and soliciting U.S. agents or distributors for three-dimensional cinema systems, and components thereof, that are covered by one or more of claims 1-3, 9-11, 13, 15, 17-19, and 21 of U.S. Patent No. 7,857,455 (“the ’455 patent”); claims 1, 2, 7, 8, 11, and 12 of U.S. Patent No. 7,959,296 (“the ’296 patent”); and claims 1, 6, and 11 of U.S. Patent No. 8,220,934 (“the ’934 patent”) in violation of section 337 of the Tariff Act of 1930, as amended (19 U.S.C. § 1337).

I.
Definitions

As used in this Order:

- (A) “Commission” shall mean the United States International Trade Commission.
- (B) “Complainant” shall mean RealD, Inc. of Beverly Hills, California.
- (C) “Respondent” shall mean MasterImage 3D, Inc., 15260 Ventura Boulevard, Suite 1220, Sherman Oaks, CA 91403.

(D) “Person” shall mean an individual, or any non-governmental partnership, firm, association, corporation, or other legal or business entity other than Respondent or its majority-owned or controlled subsidiaries, successors, or assigns.

(E) “United States” shall mean the fifty States, the District of Columbia, and Puerto Rico.

(F) The terms “import” and “importation” refer to importation for entry for consumption under the Customs laws of the United States.

(G) The term “covered products” shall mean three-dimensional cinema systems, and components thereof, covered by one or more of claims 1-3, 9-11, 13, 15, 17-19, and 21 of the ’455 patent; claims 1, 2, 7, 8, 11, and 12 of the ’296 patent; and claims 1, 6, and 11 of the ’934 patent.

II. Applicability

The provisions of this Cease and Desist Order shall apply to Respondent and to any of its principals, stockholders, officers, directors, employees, agents, distributors, controlled (whether by stock ownership or otherwise) and majority-owned business entities, successors, and assigns, and to each of them, insofar as they are engaging in conduct prohibited by section III, *infra*, for, with, or otherwise on behalf of Respondent.

III. Conduct Prohibited

The following conduct of Respondent in the United States is prohibited by this Order. For the remaining terms of the ’455, ’296, and ’934 patents, Respondent shall not:

- (A) import or sell for importation into the United States covered products;
- (B) market, distribute, sell, or otherwise transfer (except for exportation) in the United States imported covered products;

- (C) advertise imported covered products;
- (D) solicit U.S. agents or distributors for imported covered products; or
- (E) aid or abet other entities in the importation, sale for importation, sale after importation, transfer, or distribution of covered products.

**IV.
Conduct Permitted**

Notwithstanding any other provision of this Order, specific conduct otherwise prohibited by the terms of this Order shall be permitted if: (1) in a written instrument, the owner of the '455, '296, and '934 patents licenses or authorizes such specific conduct, (2) such specific conduct is related to the importation or sale of covered products by or for the United States, or (3) such specific conduct is related to an unassembled LC modulator component that has been certified as imported only for use in Respondent's Wave 3D product and not for use in covered products.

**V.
Reporting**

For purposes of this requirement, the reporting periods shall commence on January 1 of each year and shall end on the subsequent December 31. The first report required under this section shall cover the period from the date of issuance of this Order through December 31, 2016. This reporting requirement shall continue in force until such time as Respondent has truthfully reported, in two consecutive timely filed reports, that they have no inventory of covered products in the United States.

Within thirty (30) days of the last day of the reporting period, Respondent shall report to the Commission (a) the quantity in units and the value in dollars of covered products that it has (i) imported and/or (ii) sold in the United States after importation during the reporting period,

and (b) the quantity in units and value in dollars of reported covered products that remain in inventory in the United States at the end of the reporting period.

When filing written submissions, Respondent must file the original document electronically on or before the deadlines stated above and submit eight (8) true paper copies to the Office of the Secretary by noon the next day pursuant to section 210.4(f) of the Commission's Rules of Practice and Procedure (19 C.F.R. § 210.4(f)). Submissions should refer to the investigation number ("Inv. No. 337-TA-939") in a prominent place on the cover pages and/or the first page. (*See Handbook for Electronic Filing Procedures*, http://www.usitc.gov/secretary/fed_reg_notices/rules/handbook_on_electronic_filing.pdf). Persons with questions regarding filing should contact the Secretary (202-205-2000). If Respondent desires to submit a document to the Commission in confidence, it must file the original and a public version of the original with the Office of the Secretary and must serve a copy of the confidential version on Complainant's counsel.¹

Any failure to make the required report or the filing of any false or inaccurate report shall constitute a violation of this Order, and the submission of a false or inaccurate report may be referred to the U.S. Department of Justice as a possible criminal violation of 18 U.S.C. § 1001.

VI. Recordkeeping and Inspection

(A) For the purpose of securing compliance with this Order, Respondent shall retain any and all records relating to the sale, offer for sale, marketing, or distribution in the United States of covered products, made and received in the usual and ordinary course of business,

¹ Complainant must file a letter with the Secretary identifying the attorney to receive reports and bond information associated with this Order. The designated attorney must be on the protective order entered in the investigation.

whether in detail or in summary form, for a period of three (3) years from the close of the fiscal year to which they pertain.

(B) For the purposes of determining or securing compliance with this Order and for no other purpose, subject to any privilege recognized by the federal courts of the United States, and upon reasonable written notice by the Commission or its staff, duly authorized representatives of the Commission shall be permitted access and the right to inspect and copy, in Respondent's principal offices during office hours, and in the presence of counsel or other representatives if Respondent so chooses, all books, ledgers, accounts, correspondence, memoranda, and other records and documents, in detail and in summary form, that must be retained under subparagraph VI(A) of this Order.

VII. Service of Cease and Desist Order

Respondent is ordered and directed to:

(A) Serve, within fifteen days after the effective date of this Order, a copy of this Order upon each of its respective officers, directors, managing agents, agents, and employees who have any responsibility for the importation, marketing, distribution, or sale of imported covered products in the United States;

(B) Serve, within fifteen days after the succession of any persons referred to in subparagraph VII(A) of this Order, a copy of the Order upon each successor; and

(C) Maintain such records as will show the name, title, and address of each person upon whom the Order has been served, as described in subparagraphs VII(A) and VII(B) of this Order, together with the date on which service was made.

The obligations set forth in subparagraphs VII(B) and VII(C) shall remain in effect until the expiration dates of the '455, '296, and '934 patents.

VIII.
Confidentiality

Any request for confidential treatment of information obtained by the Commission pursuant to Section V and VI of this Order should be made in accordance with section 201.6 of the Commission's Rules of Practice and Procedure (19 C.F.R. § 201.6). For all reports for which confidential treatment is sought, Respondent must provide a public version of such report with confidential information redacted.

IX.
Enforcement

Violation of this Order may result in any of the actions specified in section 210.75 of the Commission's Rules of Practice and Procedure (19 C.F.R. § 210.75), including an action for civil penalties under section 337(f) of the Tariff Act of 1930 (19 U.S.C. § 1337(f)), as well as any other action that the Commission deems appropriate. In determining whether Respondent is in violation of this Order, the Commission may infer facts adverse to Respondent if it fails to provide adequate or timely information.

The enforcement of the provisions of this Order as to claims 1, 6, and 11 of the '934 patent is suspended pending final resolution of a Final Written Decision issued by the Patent Trial and Appeal Board of the U.S. Patent and Trademark Office on April 14, 2016, finding certain claims of the '934 patent unpatentable. *See* 35 U.S.C. § 318(b).

X.
Modification

The Commission may amend this Order on its own motion or in accordance with the procedure described in section 210.76 of the Commission's Rules of Practice and Procedure (19 C.F.R. § 210.76).

XI. Bonding

The conduct prohibited by section III of this Order may be continued during the sixty (60) day period in which this Order is under review by the United States Trade Representative, as delegated by the President (70 *Fed. Reg.* 43,251 (Jul. 21, 2005)), subject to Respondent posting of a bond in the amount of 100 percent of the entered value of the covered products. This bond provision does not apply to conduct that is otherwise permitted by Section IV of this Order. Covered products imported on or after the date of issuance of this Order are subject to the entry bond as set forth in the exclusion order issued by the Commission, and are not subject to this bond provision.

The bond is to be posted in accordance with the procedures established by the Commission for the posting of bonds by Complainant in connection with the issuance of temporary exclusion orders. (*See* 19 C.F.R. § 210.68). The bond and any accompanying documentation are to be provided to and approved by the Commission prior to the commencement of conduct that is otherwise prohibited by Section III of this Order. Upon the Secretary's acceptance of the bond, (a) the Secretary will serve an acceptance letter on all parties, and (b) Respondent must serve a copy of the bond and any accompanying documentation on Complainant's counsel.²

The bond is to be forfeited in the event that the United States Trade Representative approves this Order (or does not disapprove it within the review period), unless (i) the U.S. Court of Appeals for the Federal Circuit, in a final judgment, reverses any Commission final determination and order as to Respondent on appeal or (ii) Respondent exports or destroys the

² *See* note 1 above.

products subject to this bond and provides certification to that effect that is satisfactory to the Commission.

The bond is to be released in the event the United States Trade Representative disapproves this Order and no subsequent order is issued by the Commission and approved (or not disapproved) by the United States Trade Representative, upon service on Respondent of an order issued by the Commission based upon application therefore made by Respondent to the Commission.

By order of the Commission.


A handwritten signature in black ink, appearing to read "Lisa R. Barton". The signature is stylized and cursive.

Lisa R. Barton
Secretary to the Commission

Issued: July 21, 2016

PUBLIC CERTIFICATE OF SERVICE

I, Lisa R. Barton, hereby certify that the attached **ORDER** has been served on the Office of Unfair Import Investigations, and the following parties, as indicated, on **July 21, 2016**.



Lisa R. Barton, Secretary
U.S. International Trade Commission
500 E Street, SW, Room 112
Washington, DC 20436

On Behalf of Complainant RealD Inc.:

Kevin M. O'Brien, Esq.
BAKER & MCKENZIE LLP
815 Connecticut Avenue, NW
Washington, DC 20006

- Via Hand Delivery
- Via Express Delivery
- Via First Class Mail
- Other: _____

**On Behalf of Respondents MasterImage 3D, Inc. and
MasterImage 3D Asia, LLC:**

Kecia J. Reynolds, Esq.
PILLSBURY WINTHROP SHAW PITTMAN LLP
1650 Tysons Blvd., 14th Floor
McLean, VA 22102

- Via Hand Delivery
- Via Express Delivery
- Via First Class Mail
- Other: _____

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**UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C.**

In the Matter of

**CERTAIN THREE-DIMENSIONAL
CINEMA SYSTEMS AND
COMPONENTS THEREOF**

Investigation No. 337-TA-939

COMMISSION OPINION

On December 16, 2015, the presiding administrative law judge (“ALJ”) issued a final initial determination (“ID”) finding a violation of section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337, as to U.S. Patent Nos. 7,857,455 (“the ’455 patent”), 7,959,296 (“the ’296 patent”), and 8,220,934 (“the ’934 patent”). The Commission determined to review in part the final ID and requested briefing on certain issues under review and on remedy, the public interest, and bonding. 81 *Fed. Reg.* 8744 (Feb. 22, 2016).

Having considered the final ID, the parties’ written submissions, and the record in this investigation, the Commission has determined to affirm, with modifications, the final ID and to terminate the investigation with a finding of a violation of section 337 as to the ’455, ’296, and ’934 patents.

I. BACKGROUND

A. Procedural History

The Commission instituted this investigation on December 12, 2014, based on a complaint filed by RealD, Inc. of Beverly Hills, California (“RealD”). 79 *Fed. Reg.* 73902-03 (Dec. 12, 2014). The complaint alleges violations of section 337 in the importation into the United States, the sale for importation, and the sale within the United States after importation of

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certain three-dimensional cinema systems, and components thereof, that infringe certain claims of the '455, '296, and '934 patents, as well as U.S. Patent No. 7,905,602 ("the '602 patent"). *Id.* at 73902. The notice of investigation named as respondents MasterImage 3D, Inc. of Sherman Oaks, California, and MasterImage 3D Asia, LLC of Seoul, Republic of Korea (collectively, "MasterImage"). *Id.* at 73903. The Office of Unfair Import Investigations was not named as a party to the investigation. *Id.*

On July 23, 2015, the Commission terminated the investigation as to claims 8, 20, 21, and 23 of the '602 patent; claims 8, 10, and 17 of the '934 patent; claim 14 of the '455 patent; and claim 17 of the '296 patent. Notice (July 23, 2015) (determining not to review Order No. 6 (July 2, 2015)).

On August 20, 2015, the Commission terminated the investigation as to claims 12 and 15 of the '934 patent and claims 1, 2, 4, 6, 10, 11, 14, 15, and 17 of the '602 patent, thereby terminating the '602 patent in its entirety. Notice (Aug. 20, 2015) (determining not to review Order No. 7 (Aug. 3, 2015)).

On September 25, 2015, the Commission determined on summary determination that RealD satisfied the economic prong of the domestic industry requirement through its significant investment in plant, significant investment in labor, and substantial investment in engineering, research, and development. Notice (Sept. 25, 2015) (determining to review in part Order No. 9 (Aug. 20, 2015)). The Commission, however, reversed the ALJ's summary determination with respect to RealD's investment in equipment. *Id.*

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On September 14-17, 2015, the parties participated in an evidentiary hearing held before the ALJ. The ALJ thereafter received post-hearing briefing from the parties.¹

On December 16, 2015, the ALJ issued a final ID finding a violation of section 337 with respect to the three remaining asserted patents. The ALJ found that the asserted claims of the '455, '296, and '934 patents are infringed and not invalid or unenforceable. The ALJ found that the technical prong of the domestic industry requirement was satisfied for the '455, '296, and '934 patents. The ALJ also issued a Recommended Determination on Remedy and Bonding ("RD"), recommending that a limited exclusion order and cease and desist orders should issue and that a bond of 100 percent should be imposed during the period of Presidential review.

On December 29, 2015, MasterImage filed a petition for review challenging various findings in the final ID.² MasterImage petitioned for review of (1) the ID's finding that the limitation "uniformly modulate" recited in claims 1 and 17 of the '455 patent is not indefinite; (2) the ID's construction of the "uniformly modulate" limitation and the ID's finding, based on that construction, that MasterImage's Horizon M and Rv2 products infringe the asserted claims of the '455 patent; (3) the ID's finding that the preambles of the asserted claims of the '455, '296, and '934 patents are not limitations; (4) the ID's finding that the accused Horizon products meet the additional limitations of claims 11 and 21 of the '455 patent; (5) the ID's finding that the asserted claims of the '934 patent are not invalid under § 102(g) or § 103 in view of the prior invention by the inventors of the '455 patent; (6) the ID's finding that the asserted claims of the

¹ Complainant RealD Inc.'s Post-Hearing Brief; Post-Hearing Brief of Respondents MasterImage 3D Inc. and MasterImage 3D Asia, LLC ("MasterImage Posthearing Br.").

² Respondents MasterImage 3D Inc.'s and MasterImage 3D Asia, LLC's Petition for Review of Final Initial Determination on Violation of Section 337 ("MasterImage Pet.").

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'455 patent are not invalid under § 112, ¶ 1 for lack of written description support; (7) the ID's finding that the '296 patent is not invalid for failing to name a proper inventor; and (8) the RD with respect to remedy and bonding.

On January 6, 2016, RealD filed a response in opposition to MasterImage's petition.³

On January 15, 2016, and January 19, 2016, MasterImage and RealD respectively filed post-RD statements on the public interest under Commission Rule 210.50(a)(4). The Commission did not receive any post-RD public interest comments from the public in response to the Commission notice issued on December 22, 2015. 80 *Fed. Reg.* 80795 (Dec. 28, 2015).

On February 16, 2016, the Commission determined to review the final ID in part and requested additional briefing from the parties on certain issues. 81 *Fed. Reg.* at 8744-45. Specifically, the Commission determined to review (1) the ID's construction of the "uniformly modulate" limitation recited in claims 1 and 17 of the '455 patent; (2) the ID's infringement findings with respect to the asserted claims of the '455 patent; (3) the ID's findings on validity of the asserted claims of the '455 patent; (4) the ID's finding of proper inventorship of the '296 patent; (5) the ID's findings on validity of the asserted claims of the '934 patent; and (6) the ID's finding regarding the technical prong of the domestic industry requirement with respect to the '455 patent. *Id.* at 8745. The Commission also solicited briefing from the parties and the public on the issues of remedy, the public interest, and bonding. *Id.*

³ Complainant RealD Inc.'s Response to Respondents MasterImage 3D, Inc. and MasterImage 3D Asia, LLC's Petition for Review of Final Initial Determination on Violation of Section 337 ("RealD Pet. Resp.").

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On March 1, 2016, the parties filed initial written submissions addressing the Commission's questions and the issues of remedy, the public interest, and bonding.⁴ On March 11, 2016, the parties filed response briefs.⁵ No comments were received from the public.

On April 14, 2016, MasterImage filed a letter, notifying the Commission that, on that same day, the Patent Trial and Appeal Board ("PTAB") of the U.S. Patent and Trademark Office ("PTO") issued a Final Written Decision finding claims 1, 6-10, and 18-20 of the '934 patent unpatentable.⁶

On April 18, 2016, the Commission requested additional briefing on the effect of the PTAB's Final Decision on the Commission's final determination. 81 *Fed. Reg.* 23749 (Apr. 22, 2016).

On April 21, 2016, RealD filed a letter, notifying the Commission that, on April 20, 2016, the PTAB had issued a Final Written Decision finding that claims 1-23 of the '455 patent had not been shown to be unpatentable.

⁴ Complainant RealD Inc.'s Initial Written Submission Pursuant to Commission's Notice Dated February 16, 2016 ("RealD Br."); Respondents MasterImage 3D Inc.'s and MasterImage 3D Asia, LLC's Written Submission on the Issues Under Review Identified in the Notice of Commission Determination to Review the Final Initial Determination in Part ("MasterImage Br.").

⁵ Complainant RealD Inc.'s Reply to Respondents MasterImage 3D Inc. and MasterImage 3D Asia, LLC's Written Submission on the Issues Under Review ("RealD Reply"); Respondents MasterImage 3D Inc.'s and MasterImage 3D Asia, LLC's Reply to Complainant RealD Inc.'s Written Submission Pursuant to Commission's Notice Dated February 16, 2016 ("MasterImage Reply").

⁶ MasterImage Ltr. (Apr. 14, 2016) (attaching PTAB Final Written Decision ("PTAB Final Decision") (Apr. 14, 2016)).

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On April 26, 2016, the parties filed initial written submissions in response to the Commission's April 18, 2016 notice.⁷ On May 3, 2016, the parties filed response briefs.⁸

B. The Asserted Patents

The following claims remain at issue in this investigation: claims 1-3, 9-11, 13, 15, 17-19, and 21 of the '455 patent; claims 1, 2, 7, 8, 11, and 12 of the '296 patent; and claims 1, 6, and 11 of the '934 patent. ID at 7.

In prior art stereoscopic systems, three-dimensional ("3D") images are projected onto a screen using polarized light, whereby the polarization process reduces approximately half of the light transmitted by a projector. *E.g.*, JX-1 ('455 patent), col. 1, lines 11-24, col. 4, lines 26-44; JX-4 ('934 patent), col. 1, lines 57-60; CX-1031C (Sharp Witness Statement) at Q/A 30-31. The figure below depicts one such prior art system.

⁷ Complainant RealD Inc.'s Initial Written Submission Pursuant to Commission's Notice Dated April 18, 2016 ("RealD PTAB Br."); Respondents MasterImage 3D Inc.'s and MasterImage 3D Asia, LLC's Written Submission Pursuant to Commission's April 18, 2016 Notice ("MasterImage PTAB Br.").

⁸ Complainant RealD Inc.'s Reply Submission Pursuant to Commission's Notice Dated April 18, 2016 ("RealD PTAB Reply"); Respondents MasterImage 3D Inc.'s and MasterImage 3D Asia, LLC's Response to Complainant RealD Inc.'s Initial Written Submission Pursuant to Commission's Notice Dated April 18, 2016 ("MasterImage PTAB Reply").

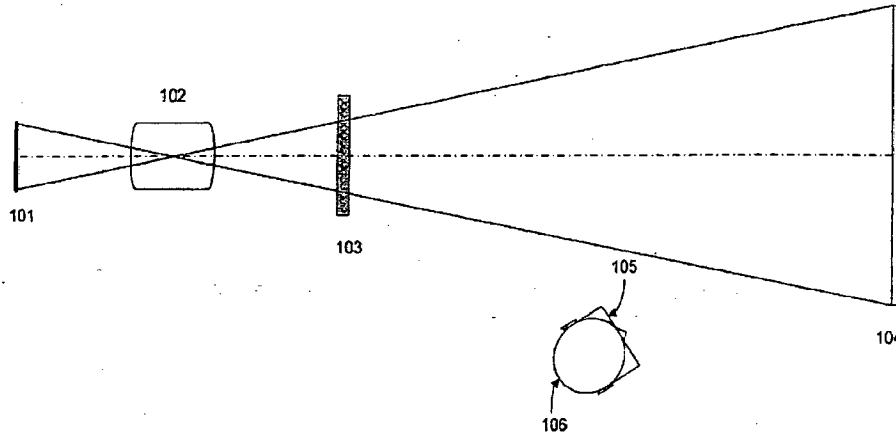


FIG. 1A
(PRIOR ART)

JX-1, Fig. 1A. A polarization modulator **103** produces a stream of alternating left and right images, and polarizing image selection eyewear **105** worn by a viewer **106** allows images of a certain polarization to pass to the left eye, and images of the orthogonal polarization to pass to the right eye. *See id.*, col. 3, lines 40-48. Presenting different images to each eye results in 3D imagery by creating or enhancing the illusion of depth of a two-dimensional object. JX-4, col. 1, lines 51-55; CX-667C (Corrected Hesselink Witness Statement) at Q/A 21.

The asserted patents are directed to stereoscopic cinema projection systems that increase the brightness of a 3D image displayed on a projection screen by splitting and redirecting polarized light. *See, e.g.*, JX-1, col. 1, lines 7-9, col. 3, lines 19-24; JX-4, col. 2, lines 1-4, col. 3, lines 24-47.

1. U.S. Patent No. 7,857,455

The '455 patent, titled "Combining P and S Rays for Bright Stereoscopic Projection," was filed on October 18, 2006, and issued on December 28, 2010. JX-1 ('455 patent). The named inventors of the '455 patent are Matt Cowan, Lenny Lipton, and Jerry Carollo. *Id.* The

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'455 patent is directed to a multiple path stereoscopic projection system that enhances the brightness of the stereoscopic images perceived by a viewer. *Id.*, Abstract.

An embodiment of the claimed invention is depicted in Figure 3 of the '455 patent (shown below).

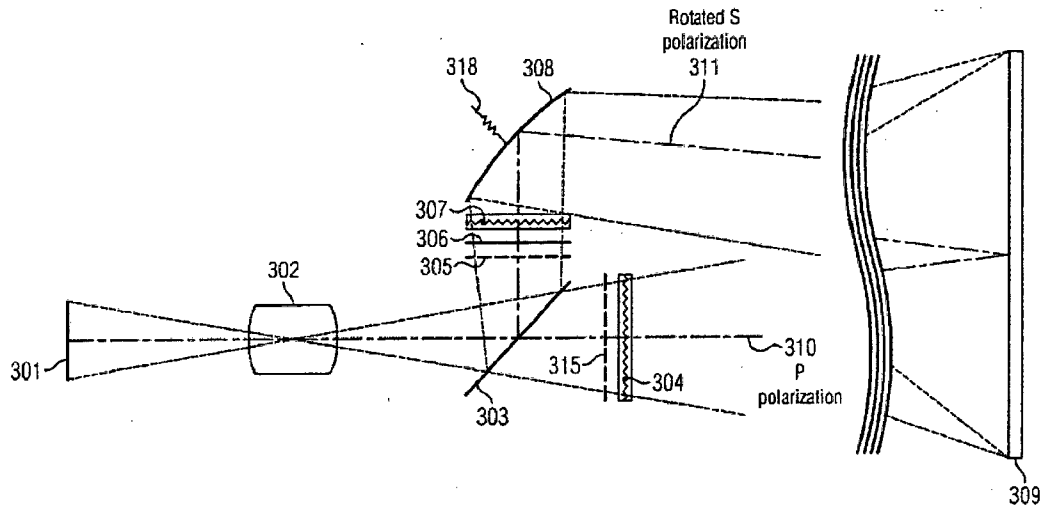


FIG. 3

Id., Fig. 3. Light is projected by a projector **301** and passes through lens **302**. *Id.*, col. 5, lines 6-8. A polarizing splitter **303** separates the light beam or light energy into two paths, a primary path P and a secondary path S. *Id.*, col. 5, lines 16-19. The P rays pass straight through the splitter **303** along the primary path with one polarization state, and the S rays are reflected along the secondary path with orthogonal polarization to the P rays. *Id.*, col. 5, lines 23-26.

In the secondary path, the S rays pass through a clean-up polarizer **305** to obtain a high degree of linear polarization, and are rotated by 90 degrees to a P polarization state by a half wave retarder **306**, making the axes of the beams in both the primary and secondary paths parallel. *Id.*, col. 5, lines 27-28, 35-56, 57-60. The rays in the secondary path are then

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modulated by a polarization modulator or ZScreen⁹ 304 to generate left-handed and right-handed circularly polarized light in synchronization with the field rate and image perspectives as projected. *Id.*, col. 4, lines 12-17, col. 6, lines 8-11. The rays in the secondary path are bent in the direction of a projection screen 309 by a mirror 308, the curvature of which may be adjusted by a mechanical element 318. *Id.*, col. 6, lines 14-32.

In the primary path, the P rays pass through another clean-up polarizer 305 and another polarization modulator or ZScreen 310. *Id.*, col. 5, lines 57-60, col. 6, lines 8-11. Thus, the system depicted in Figure 3 projects both beams of light onto the screen 309, almost doubling the amount of light projected on the screen. *Id.*, col. 3, lines 21-24, col. 6, lines 11-13.

The asserted claims of the '455 patent are claims 1-3, 9-11, 13, 15, 17-19, and 21. ID at 8. Claim 1 is representative of the asserted independent claims and recites:

1. An apparatus for projecting stereoscopic images, comprising:
 - a polarizing splitting element configured to receive image light energy and split the image light energy received into a primary path of light energy transmitted along a primary path and a secondary path of light energy transmitted along a secondary path;
 - a reflector configured to receive path light energy from one of primary path energy and secondary path light energy and to direct said path light energy toward a surface; and
 - a first polarization modulator positioned in the primary path and configured to receive the primary path of light energy, *uniformly modulate* the primary path of light energy into primary path modulated light energy, and transmit primary path modulated light energy toward the surface.

JX-1, claim 1 (emphasis added to disputed term).

⁹ A ZScreen is a polarization modulator that is described in U.S. Patent No. 4,792,850, issued on December 20, 1988, to Mr. Lipton and others. JX-1, col. 3, lines 29-32.

2. U.S. Patent No. 7,959,296

The '296 patent is titled "Combining P and S Rays for Bright Stereoscopic Projection," was filed on December 27, 2010, and issued on June 14, 2011. JX-3 ('296 patent). The application for the '296 patent was a continuation of the application for the '455 patent, and thus has a priority date of October 18, 2006. *Id.* The named inventors of the '296 patent are the same persons named for the '455 patent. *See id.* The '296 patent is similar to the '455 patent, but is more specifically directed to stereoscopic projection system using the light beams or energy from two projectors. *See id.*; ID at 127 (citing RX-590C (Corrected Kessler Witness Statement) at Q/A 282). An embodiment of the claimed invention is depicted in Figure 5A of the '296 patent (shown below).

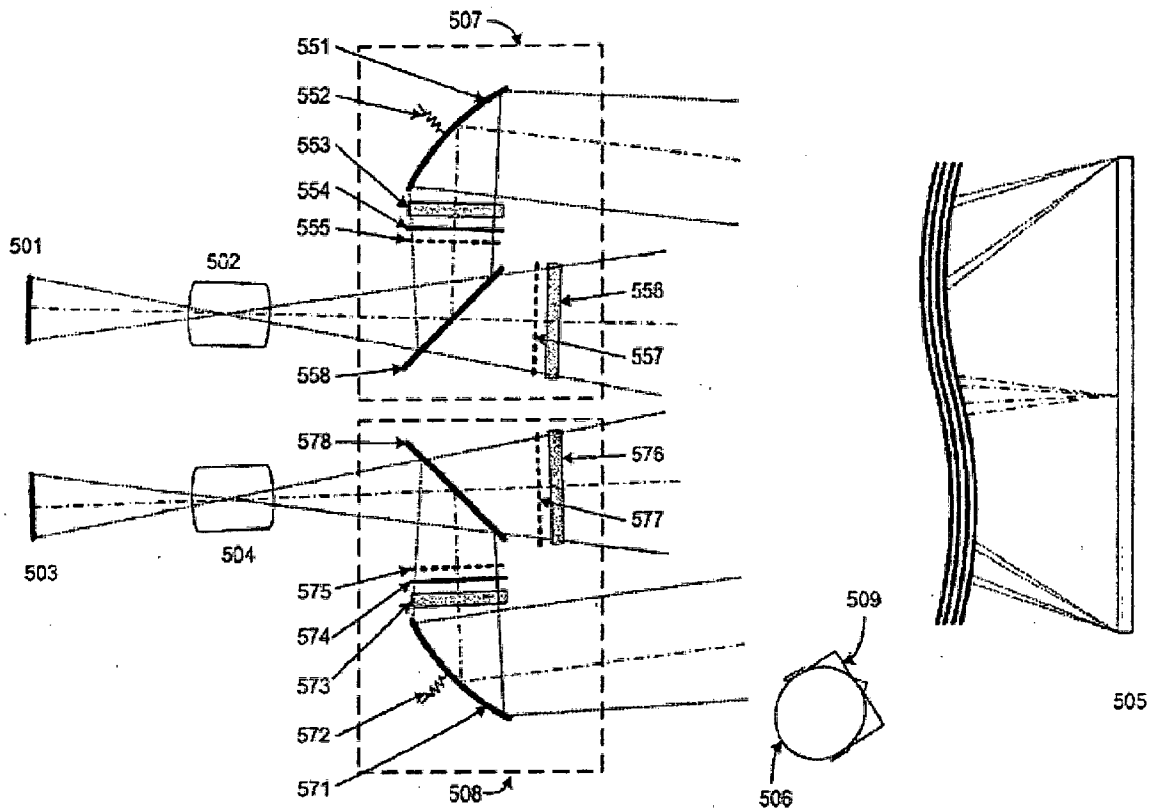


FIG. 5A

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JX-3, Fig. 5A.

The asserted claims of the '296 patent are claims 1, 2, 7, 8, 11, and 12. ID at 11. Claim 1 is the only asserted independent claim of the '296 patent and recites:

1. Apparatus for projecting stereoscopic images, comprising:
 - a first polarizing splitting element configured to receive first image light energy and split the first image light energy received along a first primary path and along a first secondary path;
 - a first reflector configured to receive one of first primary path of light energy and first secondary path of light energy and to reflect the one of first primary path of light energy and first secondary path of light energy toward a surface;
 - a first rotator configured to receive one of first primary path of light energy and first secondary path of light energy and to rotate the one of first primary path of light energy and first secondary path of light energy;
 - a second polarizing splitting element configured to receive second image light energy and split the second image light energy received along a second primary path and along a second secondary path;
 - a second reflector configured to receive one of second primary path of light energy and second secondary path of light energy and to reflect the one of second primary path of light energy and second secondary path of light energy toward a surface; and
 - a second rotator configured to receive one of second primary path of light energy and second secondary path of light energy and to rotate the one of second primary path of light energy and second secondary path of light energy.

JX-3, claim 1.

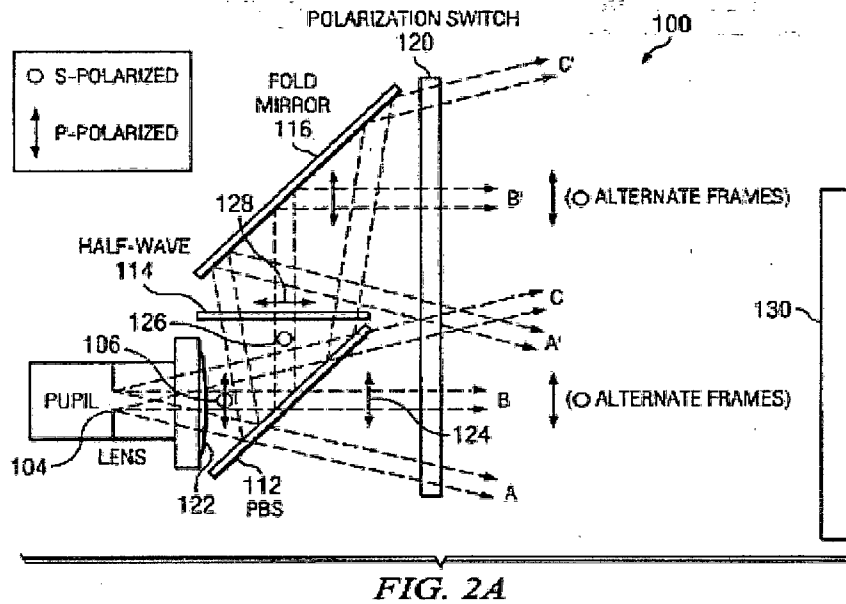
3. U.S. Patent No. 8,220,934

The '934 patent is titled "Polarization Conversion Systems for Stereoscopic Projection," was filed on March 14, 2011, and issued on July 17, 2012. JX-4 ('934 patent). The named inventors of the '934 patent are Miller H. Schuck, Michael G. Robinson, and Gary D. Sharp. *Id.* The '934 patent is a continuation of the '602 patent, which was previously terminated from the investigation. *Id.* The '934 patent generally discloses a polarization conversion system that

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includes a polarizing beam splitter, a polarization rotating element, a reflecting element, and a polarization switch. *Id.*, Abstract.

An embodiment of the claimed invention is depicted in Figure 2A of the '934 patent (shown below).



Id., Fig. 2A. Ray bundles A, B, and C containing randomly polarized light **106** emerge from the lens **122**. *Id.*, col. 3, lines 21-23, 42-44. A polarizing beam splitter **112** transmits P-polarized light and reflects S-polarized light. *Id.*, col. 3, lines 24-26. The P-polarized light passes through a polarization switch **120**, which rotates the polarization of the light in alternating frames. *Id.*, col. 3, lines 26-29. The S-polarized light reflected by the splitter **112** passes through a polarization rotator **114** and is rotated to P-polarized light. *Id.*, col. 3, lines 30-33. The new P-polarized light passes to a fold mirror **116**, which reflects the light to the polarization switch **120**. *Id.*, col. 3, lines 33-35. The polarization switch **120** rotates the polarization of the P-polarized ray bundles A', B', and C' in alternating frames in synchronization with the rotation of the A, B, and C bundles. *Id.*, col. 3, lines 36-39. "Since nearly all of the randomly polarized light **106**

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from the projection lens 122 is imaged at the screen 130 with a single polarization state, the resulting image of the system is approximately two times brighter than the image at the screen” using a prior art system. *Id.*, col. 3, lines 42-47.

The asserted claims of the '934 patent are claims 1, 6, and 11. ID at 12. Claim 1 is the only asserted independent claim of the '934 patent and recites:

1. A stereoscopic system comprising:

a polarization beam splitter (PBS) operable to direct first light bundles having a first state of polarization (SOP) along a first light path, and direct second light bundles having a second SOP along a second light path;

a polarization rotator located on the second light path, the polarization rotator being operable to translate the second SOP to the first SOP; and

a polarization switch subsystem operable to receive first and second light bundles from the first and second light paths respectively, and to selectively translate both the polarization states of the first and second light bundles to one of a first output SOP and a second output SOP.

JX-4, claim 1 (emphasis added to disputed term).

II. STANDARD ON REVIEW

Once the Commission determines to review an initial determination, its review is conducted *de novo*. *Certain Polyethylene Terephthalate Yarn and Products Containing Same*, Inv. No. 337-TA-457, USITC Pub. No. 3550 (Oct. 2002), Comm'n Op. at 9 (June 18, 2002). Upon review, “the Commission has ‘all the powers which it would have in making the initial determination,’ except where the issues are limited on notice or by rule.” *Certain Flash Memory Circuits and Products Containing Same*, Inv. No. 337-TA-382, USITC Pub. No. 3046 (July 1997), Comm'n Op. at 9-10 (June 26, 1997) (quoting *Certain Acid-Washed Denim Garments and Accessories*, Inv. No. 337-TA-324, USITC Pub. No. 2576 (Nov. 1992), Comm'n Op. at 5 (Aug. 28, 1992)). The Commission “may affirm, reverse, modify, set aside or remand for further

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proceedings, in whole or in part, the initial determination of the administrative law judge.” 19 C.F.R. § 210.45(c). “The Commission also may make any findings or conclusions that in its judgment are proper based on the record in the proceeding.” *Id.* This rule reflects the fact that the Commission is not an appellate court, but is the body responsible for making the final agency decision.

III. ANALYSIS

A. U.S. Patent No. 7,857,455

1. Claim Construction

The ID construed the limitation “uniformly modulate” recited in independent claims 1 and 17 of the ’455 patent to mean “operating on substantially all input light to substantially change it from one polarization state to another polarization state.” ID at 30, 32. MasterImage petitioned for review of the ID’s construction, arguing that the limitation should be construed as “any transformation in polarization state resulting from polarization modulation is applied equally to all portions of the incoming light.” MasterImage Pet. at 17-20. MasterImage also argued that the ID’s construction improperly substitutes an absolute term (“uniformly”) with a term of degree (“substantially”). *Id.* at 21. RealD argued that the ID’s construction is supported by the intrinsic record. RealD Pet. Resp. at 11.

Both parties rely on the prosecution history of the ’455 patent as informing the meaning of the “uniformly modulate” limitation. *See id.* at 11-13; MasterImage Pet. at 19-20. During the prosecution of the ’455 patent, the examiner rejected the asserted claims based on anticipation by U.S. Patent No. 6,280,034 to Brennesholtz (“Brennesholtz”) (CX-755) for disclosing, among other things, a “polarization modulator” configured to “modulate the primary path of light energy.” JX-5 (’455 patent file history) at REALD_ITC0000210-13. In response, the applicants

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amended the claims at issue to add the term “uniformly” before “modulate.” *Id.* at REALD_ITC0000193, -196, -202. The applicants also described and distinguished Brennesholtz as follows:¹⁰

Breenesholtz teaches that “[t]he first LCD **86** is operative to *modulate the pixel light pattern* . . .” *Breenesholtz*, col. 9, lns. 21-22 (emphasis added). Accordingly, *Breenesholtz*’s LCDs **86** and **89** operate to selectively modulate and reflect *portions of the light* before the image is recombined or formed prior to entering the projection lens **90**. Because *Breenesholtz*’s LCD panels are “operative to modulate the pixel light pattern,” they do not “uniformly modulate” the light since the LCD panels only act on portions of the light. Thus, the “illumination side” modulation used by *Breenesholtz* is for the purposes of forming an image.

In contrast, Applicants submit that the present application relates to the image side of the projector. For example, Figs. 3, 5A-B, and 6A-C all show the techniques taught by the present application as being related to the image path—i.e., the light path *after* the image has been formed by the illumination side (see e.g., Fig. 3 below) The uniform modulation² is, thus, used to switch polarization states on the image (both paths) to separate by polarization the left and right eye images. Thus, the “image side” modulation disclosed in the present application is different than the “illumination side” modulation used by *Breenesholtz*.

Id. at REALD_ITC0000200-02 (emphasis added to numerical elements). The applicants explained in footnote 2 that the phrase “uniform modulation” is “opposed to the modulation of the ‘pixel light pattern’ of *Breenesholtz* that is not uniform, because it is a pixelated LCD modulator panel.” *Id.* at REALD_ITC0000202.

Based on these statements, the applicants clearly and unequivocally defined uniform modulation to require a change in polarization states in the image light path. The applicants also clearly and unequivocally disavowed modulators that only act on portions of the light. *See*

¹⁰ Brennesholtz is sometimes misspelled as “*Breenesholtz*” in the cited document.

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Thorner v. Sony Computers Entm't Am. LLC, 669 F.3d 1362, 1366-67 (Fed. Cir. 2012) (“To constitute disclaimer, there must be a clear and unmistakable disclaimer.”).

The Commission finds that the intrinsic record does not support the double use of the term “substantially” in the construction. *See* ID at 32 (construing limitation as “operating on *substantially* all input light to *substantially* change it from one polarization state to another polarization state” (emphasis added)). The applicants’ statements distinguishing Brennesholtz for only acting on portions of the input light make clear that the “uniformly modulate” limitation requires modulation on all, as opposed to substantially all, input light. Also, the intrinsic record describes modulation without any reference or qualification as to the degree of change of polarization states. For example, the specification of the ’455 patent simply states that the ZScreen polarization modulator changes linearly polarized light into circularly polarized light, without qualifying the degree of change. *E.g.*, JX-1, col. 4, lines 12-17 (“In this manner, well known in the art, linearly polarized light is turned into circularly polarized light”); *id.*, col. 6, lines 8-11. Similarly, the applicants expressly stated during the prosecution of the ’455 patent that “uniform modulation” is “used to switch polarization states on the image,” with no language qualifying the degree of switching. *See* JX-5 at REALD_ITC0000202.

However, MasterImage’s argument that the modulation must be “applied equally” to all input light is not supported by the prosecution history and, instead, is primarily based on expert testimony by Dr. Kessler describing Brennesholtz. *See* MasterImage Pet. at 18-20. Dr. Kessler opined that the LCD panel in Brennesholtz is made up of numerous segments individually controlled by different control signals, whereas the “uniformly modulate” limitation requires “one control signal to control all the light coming in.” Hr’g Tr. 961:22-962:6 (Kessler); *see also* RX-590C (Corrected Kessler Witness Statement) at Q/A 186-187, 193. This testimony is

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inconsistent with the prosecution history, which is devoid of any statements by the applicants describing Brennesholtz or the claimed invention with reference to control signals. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005) (en banc) (“[A] court should discount any expert testimony that is clearly at odds with the claim construction mandated by the claims themselves, the written description, and the prosecution history, in other words, with the written record of the patent.” (internal quotation marks omitted)); *Kara Tech. Inc. v. Stamps.com Inc.*, 582 F.3d 1341, 1348 (Fed. Cir. 2009) (“While helpful, extrinsic sources like expert testimony cannot overcome more persuasive intrinsic evidence.”)^{11, 12}

MasterImage also argues that the ID’s construction improperly excludes an embodiment described by the ’455 patent using a linear polarization modulator that alternately outputs s-polarized and p-polarized light. MasterImage Pet. at 21-22. According to MasterImage, the linear polarization modulator in such an embodiment is in an “isotropic state” in which it outputs p-polarized light (which is half of the time); in that state, the polarization state does not change and thus is not covered by the ID’s construction. *See id.* at 22. RealD argues that the ID’s construction does not require a change in polarization state at all times and, therefore, does not exclude the embodiment. RealD Pet. Resp. at 19. The Commission agrees with RealD.

MasterImage’s argument rests on a premise that is not supported by the language of the claims at

¹¹ Thus, the Commission need not resolve the parties’ dispute as to whether Brennesholtz actually discloses a modulator that “selectively modulates” or contains “segments” with different control signals. *See* RealD Pet. Resp. at 16-17 (disputing MasterImage’s characterization of Brennesholtz).

¹² MasterImage also relies on the fact that the ’455 patent incorporates by reference the ZScreen polarization modulator described in U.S. Patent No. 4,792,850 to Lipton (RX-30, RX-126) and that a ZScreen modulator is constructed of multiple cells, with each cell controlled by a single control signal. MasterImage Pet. at 18-19. However, MasterImage incorrectly assumes that the claimed “polarization modulator” is limited to a ZScreen modulator.

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issue. Claims 1 and 17 require a “first polarization modulator” that is “configured to . . . uniformly modulate the primary path of light energy into primary path modulated light energy.” JX-1, claims 1, 17. The claims, however, do not require that this function be performed at all times. Moreover, the record evidence shows that the embodiment relied upon by MasterImage can and does perform the function at issue and, thus, is covered by the asserted independent claims. *See* Hr’g Tr. 401:16-20 (Hesselink) (testifying that, when a linear modulator is acting in a “birefringent” state, “it rotates from P to S”). Thus, the construction does not exclude an embodiment of the ’455 patent.¹³

Accordingly, the Commission modifies the ID’s construction of the “uniformly modulate” limitation to be: “operating on all input light to change it from one polarization state to another polarization state.”

2. Infringement

The ID found that MasterImage’s Horizon 3D, 3D S, M, Rv1, and Rv2 products infringe claims 1, 3, 9, 10, 11, 15, 17, 19, and 21 of the ’455 patent. ID at 45-69. The ID found that MasterImage’s Horizon 3D, 3D S, and M also infringe claims 2, 13, and 18 of the ’455 patent. *Id.* at 55-56, 63-64, 67. For the reasons stated by the ID and the additional reasons stated below, the Commission affirms the ID’s findings of infringement of the asserted claims of the ’455 patent.

¹³ Further, “the mere fact that there is an alternative embodiment disclosed in the [asserted] patent that is not encompassed by [the] court’s claim construction does not outweigh the language of the claim, especially when the court’s construction is supported by the intrinsic evidence.” *TIP Sys., LLC v. Phillips & Brooks/Gladwin, Inc.*, 529 F.3d 1364, 1373 (Fed. Cir. 2008). Federal Circuit precedent is “replete with examples of subject matter that is included in the specification, but is not claimed.” *Id.* (citing cases).

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a) **Independent Claims 1 and 17: “Uniformly Modulate”**

MasterImage petitioned for review of the ID’s infringement findings with respect to the Horizon M and Rv2 products, arguing that those products do not satisfy the “uniformly modulate” limitation under its proposed construction. MasterImage Pet. at 23-26. As discussed above, the Commission does not adopt MasterImage’s proposed construction. The Commission requested briefing on the issue of infringement under its modified construction. 81 *Fed. Reg.* at 8745.

RealD argues, and MasterImage does not dispute, that all the accused products satisfy the “uniformly modulate” limitation under the Commission’s modified construction. RealD Br. at 2-10; *see* MasterImage Br. at 6; MasterImage Reply at 2-4 & n.1. However, MasterImage argues some of the evidence relied upon by RealD should be disregarded. MasterImage Reply at 2-4.

The record evidence shows that all the accused products meet the “uniformly modulate” limitation. [

]. *See*

Hr’g Tr. 524:10-13, 526:21-527:2, 534:13-22, 535:6-20 (Y. Lee); *id.* 130:3-8, 130:19-22, 143:16-22 (C. Lee); JX-18C (Y. Lee Dep.) 340:2-17, 405:6- 406:11; CX-42C (Y. Lee Dep. Exh.) at M13D_ITC_000010; JX-14C (C. Lee Dep.) 135:6-9, 144:3-8; JX-15C (C. Lee Dep.) 230:17-231:10; CX-143C (C. Lee Dep. Exh.) at M13D_ITC_939319; CX-1600C (Patent Infringement

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Opinion) at M13D_ITC_941586, M13D_ITC_941592-593; CX-667C (Corrected Hesselink Witness Statement) at Q/A 68-69.¹⁴

The Commission gives little to no weight to the other evidence cited by RealD, namely, MasterImage’s Korean patents “directed to” the Horizon 3D or 3D S products. *See* RealD Br. at 9-10. MasterImage’s patents are not relevant to the issue of infringement of RealD’s patents because RealD has not shown that any claim in MasterImage’s patents covers the accused products on a limitation-by-limitation basis.

Accordingly, the Commission finds that the accused products satisfy the “uniformly modulate” limitation recited in independent claims 1 and 17 of the ’455 patent under the Commission’s claim construction and, thus, infringe those claims.

b) Dependent Claims 11 and 21

MasterImage argues in its petition that the ID erred in finding that the accused products infringe claims 11 and 21 of the ’455 patent by relying on the same structure to satisfy two “separate and distinct” elements recited by the claims. MasterImage Pet. at 32-35 (citing *Acacia Media Techs. Corp. v. New Destiny Internet Group*, No. C 05-01114, 2007 WL 678317, at *13 (N.D. Cal. Mar. 2, 2007)). Specifically, MasterImage argues that [] in the accused products cannot satisfy both the “reflector” limitation recited by claim 1 and the “primary path arrangement” limitation recited by claim 11, which depends from claim 1. *Id.* MasterImage argues that Figure 6A of the ’455 patent shows a mirror corresponding to the “reflector”

¹⁴ [

]. *See* CX-1600C at M13D_ITC_941586, M13D_ITC_941592-593.

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limitation of claim 1 that is “separate and distinct” from a pair of prisms or planar mirrors corresponding to the “primary path element arrangement” limitation of claim 11. *Id.*

MasterImage similarly argues that [] in the accused products cannot satisfy both the “reflector” limitation recited by claim 17 and the “elements” limitation recited by claim 21, which depends from claim 17. *Id.* at 35.

RealD argues that MasterImage misplaces reliance on *Acacia*, which does not hold that the same structure in an accused device cannot satisfy two claim limitations. RealD Resp. at 35. Rather, *Acacia* merely states that dependent claims that recite “further comprising” in the preamble contain limitations in addition to those recited in the claim from which that claim depends. *Id.*

Claims 11 and 21 recite:

11. The apparatus of claim 1, further comprising a primary path element arrangement configured to substantially optically superimpose light energy transmission between the second path and the first path.
21. The apparatus of claim 17, further comprising elements configured to substantially optically superimpose light energy transmission between the primary path and the secondary path.

JX-1, claims 11, 21 (’455 patent). The language of the claims does not require the “reflector” and “primary path arrangement” limitations of claim 11, or the “reflector” and “elements” limitations of claim 21, to be satisfied by separate and distinct elements in the accused products. Although claims 11 and 21 recite additional limitations to claims 1 and 17, the accused products literally infringe claims 11 and 21 so long as they “embody every element of the claim.” *See Builders Concrete, Inc. v. Bremerton Concrete Prods. Co.*, 757 F.2d 255, 257 (Fed. Cir. 1985). Contrary to MasterImage’s argument, *Acacia* does not preclude the same element or structure in an accused product from satisfying two different limitations in the same claim.

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Also, nothing in the specification of the '455 patent precludes a mirror from satisfying more than one limitation. To the contrary, the specification describes a single mirror that both directs light toward a surface, as required by claims 1 and 17, and superimposes the light energy between the primary and secondary paths, as required by claims 11 and 21:

The secondary S beam needs to bend in the direction of the projection screen 309. A reflective surface such as a mirror 308 (or other reflecting device such as a prism) can be used to do this bending. The mirror 308 is capable of adjusting beam path angles such that the primary and secondary beams may be aligned precisely on the projection screen 309. At this point the path length to the screen 309 is different for the two beams, and this will result in a difference in magnification and poor resultant image quality since the two images do not precisely overlap. The mirror 308 is therefore preferably deformable to provide optical power, adjust for the difference in magnification of the two beams, and substantially match the magnification of the primary path and secondary path to strike the same position on the projection screen 309.

JX-1, col. 6, lines 14-27 (emphasis added), Fig. 3. The specification describes another embodiment in which the “arrangement of FIG. 6 serves to substantially optically superimpose light energy transmission between the second path and the first path.”¹⁵ *Id.*, col. 10, lines 8-11. Notably, the specification refers to the “arrangement of FIG. 6” as a whole, rather than identifying any specific structures, as performing the optical superimposition function. Although the specification states that a “pair of prisms 605 and 620 or front surface mirrors is used to increase the path length of the transmitted beam in order to match the path length of the reflected beam” (*id.*, col. 9, lines 65-67, Fig. 6A), this statement does not foreclose other structures from substantially optically superimposing light energy transmission between the second path and the first path.

¹⁵ Based on the context of the specification and the absence of a Figure 6 in the '455 patent, the specification appears to incorrectly refer to Figure 6A as Figure 6. See JX-1, col. 9, line 43 to col. 10, line 11.

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MasterImage also argues that the accused products do not infringe []. *Id.* MasterImage Pet. at at 34. But nothing in the intrinsic record suggests that the limitations of claims 11 and 17 are so limited. As the ID noted, the claim language and the specification do not preclude the reflected path from being the “primary path.” *See* ID at 62. Thus, the Commission agrees with the ID that “either the transmitted path or the reflected path can be designated to be the primary path and the primary path element arrangement reads on [] of the accused products because [] superimpose the light reflected onto the projection screen.” *Id.* at 63. Also, as the ID noted, “although the specification often describes very specific embodiments of the invention, [the Federal Circuit has] repeatedly warned against confining the claims to those embodiments.” *Id.* at 62 (citing *Phillips*, 415 F.3d at 1323).

Moreover, MasterImage does not dispute that [] in the accused products is “configured to receive path light energy from one of primary path energy and secondary path light energy and to direct said path light energy toward a surface” *and* “configured to substantially optically superimpose light energy transmission between the second path and the first path” as required by claim 11. Nor does MasterImage dispute that [] is “positioned in the secondary path configured to reflect secondary path light energy” *and* “configured to substantially optically superimpose light energy transmission between the primary path and the secondary path” as required by claim 21. MasterImage also does not dispute any of the record evidence relied upon by the ID in reaching its finding.

Accordingly, the Commission affirms, with the supplemental reasoning stated above, the ID’s finding that the accused products infringe claims 11 and 21 of the ’455 patent.

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3. Validity

a) §§ 102(e), 102(g), and 103

The ID found that the asserted claims of the '455 patent are not invalid under 35 U.S.C. §§ 102(e), 102(g), or 103. ID at 93-101, 112-27. The ID found that the asserted claims of the '455 patent are not invalid under §§ 102(e) or 103 based on U.S. Patent No. 7,905,602 (“the '602 patent” or “the Schuck patent”) (JX-2). ID at 96-99, 113. The ID found that the asserted claims of the '455 patent are not invalid under § 102(g) based on the work of the inventors of the '602 patent. *Id.* at 100-01. The ID also found that the asserted claims of the '455 patent are not invalid under § 103 based on the combination of U.S. Patent No. 4,792,850 (“Lipton '850”) (RX-30) and certain other asserted prior art. ID at 121-27. The ID based its findings in part on MasterImage’s failure to provide a claim analysis showing that each limitation is satisfied by the prior art. *See id.* at 99, 101, 113. The Commission requested briefing on whether the prior art discloses or suggests the “uniformly modulate” limitation under its modified construction. 81 *Fed. Reg.* at 8745.

MasterImage argues that the “uniformly modulate” limitation is disclosed by U.S. Patent No. 6,280,034 (“Brennesholtz '034”) (CX-755, RX-88) and Lipton '850. MasterImage Br. at 7-13. RealD disagrees, but acknowledges that the limitation is disclosed by the Schuck patent. RealD Br. at 12-14.

The ID found that the Schuck patent is not prior art to the '455 patent, and the Commission does not disturb that finding. *See ID* at 96. In any event, MasterImage has not shown by clear and convincing evidence that each and every limitation of the asserted claims of

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the '455 patent is disclosed or suggested by the prior art to render the claims invalid.¹⁶ *See id.* at 99, 101, 113, 121-27. Thus, the Commission affirms the ID's findings on validity under §§ 102(e), 102(g), and 103.

b) § 112, ¶ 1

The ID found that claims 1, 3, 9-11, 15, 17, 19, and 21 of the '455 patent are not invalid under 35 U.S.C. §112, ¶ 1 for failing to satisfy the written description requirement. ID at 84-85. The Commission requested briefing on various aspects relating to the written description requirement. 81 *Fed. Reg.* at 8745.

MasterImage argues that the written description requirement is not satisfied with respect to the aforementioned claims, which MasterImage contends “do not specify a retarder (or other element) for rotating the polarization state of the light in one path to match that of the light in the other path.” MasterImage Br. at 15-16. MasterImage argues that the '455 patent discloses only an apparatus using a “retarder/polarization rotating element” and further states that polarization rotation is “required.” *Id.* at 15, 25-26. RealD disagrees, arguing that the specification, originally filed claims, and inventor and expert testimony show that there is written description support for the claims at issue and that a rotating element is not required. RealD Br. at 22-27.

The patent specification must “contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to

¹⁶ MasterImage's arguments to the Commission are primarily focused on challenging the proposed claim construction, rather than on the invalidity of the asserted claims under the proposed construction. *See* MasterImage Br. at 7 (“[A]ny proper construction must distinguish over the polarization modulator disclosed in Brennesholtz.”); MasterImage Reply at 5 (“The question posed by the Commission concerns claim construction—not invalidity based on prior art.”).

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enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same.” 35 U.S.C. §112, ¶ 1. Although “written description and enablement often rise and fall together,” the requirements are separate. *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351, 1352 (Fed. Cir. 2010) (en banc). To satisfy the written description requirement of §112, ¶ 1, the description “must clearly allow persons of ordinary skill in the art to recognize that [the inventor] invented what is claimed.” *Id.* at 1351. “In other words, the test for sufficiency is whether the disclosure of the application relied upon reasonably conveys to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date.” *Id.* Possession means “possession as shown in the disclosure” and “requires an objective inquiry into the four corners of the specification from the perspective of a person of ordinary skill in the art.” *Id.* “One shows that one is ‘in possession’ of *the invention* by describing *the invention*, with all its claimed limitations, not that which makes it obvious.” *Lockwood v. Am. Airlines, Inc.*, 107 F.3d 1565, 1572 (Fed. Cir. 1997). “One does that by such descriptive means as words, structures, figures, diagrams, formulas, etc., that fully set forth the claimed invention.” *Id.*

The Commission agrees with RealD that the written description of the ’455 patent supports claims 1, 3, 9-11, 15, 17, 19, and 21. As the ID notes, the Abstract and the “Summary of the Invention” both state that a retarder “may” be used. JX-1, Abstract, col. 1, lines 60-61; *see* ID at 85. The specification also discloses a “first” and a “second aspect of the present design” that does not include a retarder or a separate rotating element. JX-1, col. 1, lines 45-59, col. 2, lines 3-13.

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Other parts of the specification describe the use of a retarder in preferred embodiments of the invention. For example, the specification describes the role of rotation by a retarder in the context of an embodiment depicted in Figure 3:

Polarization of the S rays is, in one embodiment rotated by 90 degrees using a half wave retarder **306**. . . .

Rotation of the axes of the polarized beams, either P or S, is required in order to make the axes parallel. As employed herein, to clarify any issues regarding nomenclature, a beam designated as P or S indicates that beam comes from a splitter in that form, and thus while the beam may be altered in form by retarders or other components, the beam originally was either transmitted or reflected in the format identified. In the case of FIG. 3, the circular polarization resulting from the polarization modulators' action typically provides a relatively high dynamic range when analyzed provided that the linear components' axes of the polarizers and analyzers are orthogonal, which is relatively straightforward to manage as is known in the art. If the S and P beams have their axes orthogonal, the circularly polarized light outputted by the polarizing modulators or ZScreen will be made up of components of circularly polarized light partially made up of circularly polarized light whose maximum dynamic range may be analyzed at two positions orthogonal to each other. It is not possible to achieve this using the sheet polarizer analyzers currently available. Thus the axes of one beam must be rotated, but it is immaterial which so long as both enter the polarization modulators with axes parallel.

Id., col. 5, lines 27-56. Also, a retarder is referenced or included in every drawing of an embodiment. *See, e.g., id.*, Fig. 3 (half wave retarder **306**), Fig. 5A (retarders (e.g., half wave retarders **554**, **574**)), Fig. 6A (half wave retarder **604**). However, the inclusion of a retarder in every patent drawing “does not compel the conclusion that the written description of the [] patent is so narrowly tailored as to preclude [the applicants] from claiming” other subject matter, namely, a stereoscopic system without a retarder or a rotating element. *See Lampi Corp. v. Am. Power Prods., Inc.*, 228 F.3d 1365, 1378 (Fed. Cir. 2000). As the ID notes, the specification

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indicates that a retarder is not required in stating that a beam “may be altered in form by retarders or other components.” JX-1, col. 5, lines 36-41; ID at 86.¹⁷

MasterImage relies on *ICU Medical, Inc. v. Alaris Medical Systems, Inc.*, 558 F.3d 1368 (Fed. Cir. 2009) and *LizardTech, Inc. v. Earth Resource Mapping, Inc.*, 424 F.3d 1336 (Fed. Cir. 2005), two cases in which the Federal Circuit held that the written description did not support broadly written claims. MasterImage Br. at 24-25. Those cases are distinguishable. In both cases, the specifications at issue described the invention as including a specific feature. *ICU Med.*, 558 F.3d at 1378 (“ICU’s asserted spikeless claims are broader than its asserted spike claims because they do not include a spike limitation But the specification describes only medical valves with spikes.”); *LizardTech*, 424 F.3d at 1344 (“The problem is that the specification provides only one method for creating a seamless DWT, which is to ‘maintain updated sums’ of DWT coefficients. . . . Yet claim 21 is broader than claim 1 because it lacks the ‘maintain updated sums’ limitation.”). By contrast, the specification here contains descriptions corresponding to the claimed subject matter. See JX-1, Abstract, col. 1, lines 45-59, col. 2, lines 3-13.

MasterImage dismisses those descriptions, arguing that they do not describe “‘embodiments’ of the invention in the sense mandated by the written description requirement of § 112.” MasterImage Reply at 16-17. However, the written description requirement does not mandate detailed disclosure of “embodiments.” Indeed, the Federal Circuit has noted that “it is

¹⁷ MasterImage argues that the phrase “other components” refers not to rotation components similar to a retarder, but to components that alter the beam in other ways such as imparting circular polarization to the beam. MasterImage Pet. at 78. The context in which that phrase appears indicates otherwise. See JX-1, col. 5, lines 35-56 (discussing rotation of axes of polarized beams).

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unnecessary to spell out every detail of the invention in the specification; only enough must be included to convince a person of skill in the art that the inventor possessed the invention” *LizardTech*, 424 F.3d at 1345. MasterImage also argues that the specification of the ’455 patent, when read in its entirety, indicates that a retarder or other rotation element is an “essential feature” of the invention. MasterImage Pet. at 76-77 (citing *VirnetX, Inc. v. Cisco Sys., Inc.*, 767 F.3d 1308, 1318 (Fed. Cir. 2014); *Akamai Techs., Inc. v. Limelight Networks, Inc.*, 629 F.3d 1311, 1327 (Fed. Cir. 2010), *vacated on other grounds sub nom., Akamai Techs., Inc. v. MIT*, 419 F. App’x 989 (Fed. Cir. 2011) (per curiam)). However, MasterImage’s reliance on such authorities is misplaced; those authorities address claim construction principles, rather than the requirements of § 112, ¶ 1. *See VirnetX*, 767 F.3d at 1318; *Akamai Techs.*, 629 F.3d at 1327. In essence, MasterImage asks the Commission to overlook the very statements that provide the necessary support for the invention as claimed. *See Lockwood*, 107 F.3d at 1572. As discussed above, this is not a case in which the inventors claimed an invention distinct from that disclosed in the specification.

Moreover, MasterImage has not shown that rotation is “required” beyond the context in which that statement appears in the specification. Indeed, MasterImage’s explanations as to why rotation is required are premised on features that are not required by the claims and, moreover, pertain to a preferred embodiment using a ZScreen. *See, e.g.*, MasterImage Br. at 19 (“Because each *pi*-cell in a ZScreen polarization modulator is oriented and tuned to behave as a quarter wave retarder, inputting two light beams having orthogonal linear polarizations . . . causes the *pi*-cells . . . to output two circularly polarized light beams having orthogonal (opposite) handedness. Said another way, *for the pi-cells to output circularly polarized light of a single handedness at any given time*, all of the light going into the *pi*-cells must have the same linear

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polarization.” (emphasis added) (internal citations omitted)); *id.* at 21 (“[T]he ‘455 patent invention utilizes three optical elements in addition to a ZScreen(s): PBS 303, half wave retarder 306 and reflector 308. . . . [T]he half wave retarder rotates the light on one path *so that it has the same polarization as the light on the other path.*” (emphasis added)).¹⁸

Further, the specification’s statements about rotation show that rotation is not an essential element of the invention, but rather is used in a preferred embodiment to output circularly polarized light with high dynamic range. The specification explains that, with respect to the embodiment in Figure 3, “the circular polarization resulting from the polarization modulators’ action typically provides a relatively high dynamic range when analyzed provided that the linear components’ axes of the polarizers and analyzers are orthogonal.”¹⁹ JX-1, col. 5, lines 41-47. Although the specification describes a situation in which the S and P beams are not rotated but rather remain orthogonal before outputting “circularly polarized light whose maximum dynamic range may be analyzed at two positions orthogonal to each other,” the specification states that such analyzation is “not possible . . . using the sheet polarizer analyzers currently available.” *Id.*, col. 5, lines 47-54. Thus, “the axes of one beam must be rotated” to output circularly polarized light with high dynamic range. *Id.*, col. 5, lines 54-56. Read in its entirety, the specification explains that rotation is needed to output circularly polarized light with high dynamic range because the currently available sheet polarizer analyzers are not capable of analyzing light beams

¹⁸ MasterImage’s arguments regarding a single polarization modulator similarly are unpersuasive because they, too, are premised on the use of a ZScreen or other features not required by the claims at issue. *See* MasterImage Br. at 23; MasterImage Reply at 22-23.

¹⁹ The “analyzers” are those used in eyewear worn by an observer to ensure that each eye sees the appropriate view. JX-1, col. 1, lines 43-48, col. 2, lines 29-35.

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with polarizations that are orthogonal to each other.²⁰ Because rotation is not an essential element of the invention and the written description provides support for the claims at issue, the Commission does not address the parties' arguments about the various ways to implement the invention without a retarder or a rotating element. *See* RealD Br. at 24-25; MasterImage Br. at 28-29.

MasterImage also argues that the ID erred in relying on the originally filed claims. MasterImage Pet. at 79. RealD argues that “retarder-less claims” were included in the originally filed set of claims, thus providing support for claims 1 and 17. RealD Pet. Resp. at 79-80. The Federal Circuit has noted that, “while it is true that original claims are part of the original specification, that truism fails to address the question whether original claim language necessarily discloses the subject matter that it claims.” *Ariad Pharms.*, 598 F.3d at 1349 (internal citation omitted). Further, although *Ariad Pharmaceuticals* precluded similar language in the original claims from being the sole basis of satisfying the written description requirement, *id.* at 1349-51, here the specification provides support for the claims.

MasterImage also relies on an email written by Jerry Carollo, one of the named inventors, two months after the application was filed to argue that the retarder is essential. MasterImage Pet. at 80-81. MasterImage argues that, in the email (RX-86C):

²⁰ MasterImage goes too far in arguing that “maximum dynamic range” is “*sine qua non* of a stereoscopic system.” *See* MasterImage Reply at 12. This argument assumes that the asserted claims require a stereoscopic system or an “apparatus for projecting stereoscopic images,” a feature recited in the preambles. As the ID found, the preambles are not claim limitations. *See* ID at 24, 33, 35.

[

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MasterImage Br. at 30. The meaning of Mr. Carollo's statements is not entirely clear.

Moreover, Mr. Carollo's email largely discusses features in a preferred embodiment, and, as the ID notes, the email does not even refer to the claims or the disclosures in the '455 patent application. ID at 86-87.

Accordingly, the Commission affirms, with the supplemental reasoning stated above, the ID's finding that MasterImage has not provided clear and convincing evidence that claims 1, 3, 9-11, 15, 17, 19, and 21 of the '455 patent are invalid under § 112, ¶ 1 for failing to satisfy the written description requirement.

c) § 112, ¶ 2

The ID found that the claim limitation "uniformly modulate" is not indefinite under 35 U.S.C. § 112, ¶ 2. ID at 30, 87. The Commission affirms the ID's finding and adopts its analysis.

4. Domestic Industry

The ID found that the technical prong of the domestic industry requirement was satisfied for the asserted patents. ID at 152-64. Among other things, the ID found that, under its construction, RealD's XL and XLW products satisfy the "uniformly modulate" limitation recited in independent claims 1 and 17 of the '455 patent. *See id.* at 157-58. The Commission requested briefing on this aspect of the domestic industry requirement applying its modified construction. 81 *Fed. Reg.* at 8745.

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RealD argues, and MasterImage concedes, that RealD's XL and XLW products satisfy the "uniformly modulate" limitation under the Commission's modified construction. RealD Br. at 14-19; MasterImage Br. at 15.

The Commission agrees with the parties. [

] Hr'g Tr.

(Y. Lee) 524:10-13; JX-18C (Y. Lee Dep.) 373:3-8; CX-1552C (Corrected Schuck Witness Statement) at Q/A 45, 53-56, 62-64, 75-77, 84; CX-667C (Corrected Hesselink Witness Statement) at Q/A 90-91, 97, 106-07.²¹

Accordingly, the Commission finds that RealD's XL and XLW products satisfy the "uniformly modulate" limitation recited in independent claims 1 and 17 of the '455 patent under the Commission's claim construction. For this reason and the additional reasons stated by the ID, the Commission finds that the technical prong of the domestic industry requirement is met with respect to the '455 patent.

²¹ RealD also relies on Dr. Brennesholtz's testimony. RealD Br. at 16. However, the Commission does not rely on such testimony because, contrary to RealD's assertions, the cited evidence does not include any testimony that the RealXL product includes the elements of claim 1 of the '455 patent. *See* CDX-163C at 3-4 (citing Brennesholtz deposition testimony that RealD products includes elements of claim 1 of the '934 patent); RX-588C (Third Corrected Brennesholtz Witness Statement) at Q/A 734 (testifying regarding appropriate claim construction).

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B. U.S. Patent No. 7,959,296

1. Inventorship

The ID found MasterImage did not prove by clear and convincing evidence that the '296 patent is invalid under 35 U.S.C. § 116 for improperly naming Jerry Carollo as an inventor. ID at 135.

MasterImage argues that Mr. Carollo is not a proper inventor of the '296 patent because his contribution relating to a deformable mirror occurred after the conception of the other two named inventors and, moreover, is not required by any of the claims of the '296 patent. MasterImage Pet. at 85-90. MasterImage further argues there is no evidence that Mr. Carollo contributed to the dual projector system claimed by the '296 patent. *Id.* at 85. MasterImage argues that Mr. Carollo's assistance in creating architectural diagrams was not a significant contribution because he merely used tools available to an ordinary skilled designer and applied concepts that were well-known and within the state of the art at that time. *Id.* at 89-90.

RealD argues MasterImage failed to show by clear and convincing evidence that Mr. Carollo was improperly named as a co-inventor of the '296 patent, and contends the ID's finding is correct and supported by the evidence. RealD Resp. at 83-84.

Under 35 U.S.C. § 116, “[w]hen an invention is made by two or more persons jointly, they shall apply for patent jointly and each make the required oath.” “Inventors may apply for a patent jointly even though (1) they did not physically work together or at the same time, (2) each did not make the same type or amount of contribution, or (3) each did not make a contribution to the subject matter of every claim of the patent.” *Id.*

“Conception is the touchstone of inventorship, the completion of the mental part of invention.” *Burroughs Wellcome Co. v. Barr Labs., Inc.*, 40 F.3d 1223, 1227-28 (Fed. Cir. 1994). It is the “formation in the mind of the inventor, of a definite and permanent idea of the

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complete and operative invention, as it is hereafter to be applied in practice.” *Ethicon, Inc. v. U.S. Surgical Corp.*, 135 F.3d 1456, 1460 (Fed. Cir. 1998)). “[E]ach joint inventor must generally contribute to the conception of the invention.” *Id.* Although 35 U.S.C. § 116 “does not set forth the minimum quality or quantity of contribution required for joint inventorship,” each joint inventor “must contribute in some significant manner to the conception of the invention.” *Falana v. Kent State Univ.*, 669 F.3d 1349, 1357 (Fed. Cir. 2012). Each inventor need not contribute equally or to each claim of the patent. *Univ. of Pittsburgh of Commonw. Sys. of Higher Educ. v. Hedrick*, 573 F.3d 1290, 1297 (Fed. Cir. 2009). One who “merely assist[] the actual inventor after conception of the claimed invention” or “simply provides the inventor with well-known principles or explains the state of the art” does not qualify as a joint inventor. *Ethicon*, 135 F.3d at 1460.

“The inventors named in an issued patent are presumed correct, and a party alleging misjoinder of inventors must prove its case by clear and convincing evidence.” *Univ. of Pittsburgh*, 573 F.3d at 1297. The party challenging inventorship “must also show that the persons to be removed did not contribute to the invention of any of the allowed claims.” *Id.*

The ’296 patent is a continuation of the ’455 patent, and thus shares nearly the same specification as the ’455 patent. JX-1 (’455 patent); JX-3 (’296 patent). Both the ’455 and ’296 patents name Mr. Carollo, along with Matt Cowan and Lenny Lipton, as inventors. *Id.*

The Commission finds that Mr. Carollo’s contribution of a deformable mirror pertains to at least one claim of the ’296 patent. The evidence shows, and MasterImage does not dispute, that Mr. Carollo contributed the concept of the deformable mirror. *See* CX-1027C (Cowan Witness Statement) at Q/A 13; Hr’g Tr. 205:2-206:3, 264:13-265:2 (Lipton); MasterImage Pet. at 85-86. Although the claims of the ’296 patent do not recite a “deformable mirror,” claim 13

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recites a limitation that performs a function similar to that of a deformable mirror: “a first path element arrangement and a second path element arrangement configured to substantially optically superimpose light energy transmission between the first primary path of light energy, the second primary path of light energy, the first secondary path of light energy, and the second secondary path of light energy.” JX-3, claim 13. This function is similar to that required by claim 6 of the ’455 patent, which recites a “deformable mirror.” *See* JX-1, claim 6 (requiring a “deformable mirror configured to substantially optically superimpose light energy transmission between the second path and the first path”). Further, the specifications of both the ’455 and ’296 patents similarly describe the function of a deformable mirror: “The mirror **308** is therefore preferably deformable to provide optical power, adjust for the difference in magnification of the two beams, and *substantially match the magnification of the primary path and secondary path to strike the same position on the projection screen 309.*” *E.g.*, JX-3, col. 6, lines 37-41 (emphasis added).

The evidence also shows Mr. Carollo contributed an architectural diagram that eventually became Figure 3 in the ’455 and ’296 patents and, moreover, shows the arrangement of the limitations as recited by the claims of both patents. In May 2006, Mr. Cowan and Mr. Lipton asked Mr. Carollo and his company, Creative Display Systems, to determine the feasibility of their []. CX-1027C at Q/A 12-15. Mr. Cowan and Mr. Lipton provided Mr. Carollo an overview of various elements for a project that eventually became RealD’s XL product. *Id.* The overview, however, did not include any figures showing how the elements were arranged or mention a deformable mirror. *See* CX-1083C (April 28, 2006 RealD Polarizing Beamsplitting Project). Mr. Carollo created architectural diagrams for a July 27, 2006 report with elements corresponding to the elements of

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Figure 3 in the '455 patent. *See* RX-72C.0007 (July 27, 2006 Final Feasibility Report, Figure 4); RX-71C.0017 (September 22, 2006 Final Design Review); RX-588C (Third Corrected Brennesholtz Witness Statement) at Q/A 601.

MasterImage argues that the ID erred in not considering certain evidence as to what Mr. Cowan and Mr. Lipton had conceived prior to contacting Mr. Carollo. MasterImage Pet. at 83-85. But the evidence cited by MasterImage does not show that Mr. Cowan and Mr. Lipton had conceived of all the elements required by the claims of the '455 patent, including how those elements are arranged with respect to each other. *See, e.g.*, JX-26C (Sharp Dep.) at 65:4-9; CX-1027C at Q/A 11-13.

Also, contrary to MasterImage's argument, Mr. Carollo's contribution is not limited to the single projector system claimed by the '455 patent. The '296 patent is directed to a stereoscopic projection system for two projectors, incorporating many of the same limitations of the '455 patent (*see, e.g.*, JX-3, claim 1; ID at 127 (citing RX-590C (Kessler Witness Statement) at Q/A 282)), and, thus, the contribution by Mr. Carollo pertains to both patents.

MasterImage also argues that the July 27, 2006 report and a subsequent September 22, 2006 Final Design Review relied upon by the ID refer only to Mr. Carollo's company, Creative Design Solutions, and not Mr. Carollo individually. MasterImage Pet. at 89. The Commission finds that MasterImage waived this argument by not raising it in its prehearing or posthearing brief. In any event, MasterImage has not shown by clear and convincing evidence that Mr. Carollo did not personally contribute to the inventions of the '296 patent.

For the reasons stated by the ID and the additional reasons stated above, the Commission finds that the '296 patent is not invalid for naming Mr. Carollo as an inventor.

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C. U.S. Patent No. 8,220,934

1. § 102(g)

The ID found that MasterImage failed to show by clear and convincing evidence that claims 1, 6, and 11 of the '934 patent are invalid under § 102(g) in view of the work of the inventors of the '455 patent as reflected by a March 24, 2006 drawing by Matt Cowan, one of the named inventors of the '455 patent (RX-67C) and a July 27, 2006 report prepared for RealD (RX-72C). ID at 102-06.

Under 35 U.S.C. § 102(g)(2), a person shall be entitled to a patent unless “before such person’s invention thereof, the invention was made in this country by another inventor who had not abandoned, suppressed, or concealed it.”²² “In determining priority of invention . . . , there shall be considered not only the respective dates of conception and reduction to practice of the invention, but also the reasonable diligence of one who was first to conceive and last to reduce to practice, from a time prior to conception by the other.” *Id.*; *see also Mahurkar v. C.R. Bard, Inc.*, 79 F.3d 1572, 1577 (Fed. Cir. 1996) (“[P]riority of invention goes to the first party to reduce an invention to practice unless the other party can show that it was the first to conceive the invention and that it exercised reasonable diligence in later reducing that invention to practice.” (internal quotation marks omitted)).

As discussed in the context of inventorship, conception is the “formation in the mind of the inventor[] of a definite and permanent idea of the complete and operative invention, as it is hereafter to be applied in practice.” *Singh v. Brake*, 222 F.3d 1362, 1367 (Fed. Cir. 2000). “A

²² Because the application for the '934 patent was filed before the effective date of the Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284 (2011), the Commission applies the pre-AIA version of 35 U.S.C. § 102(g).

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conception must encompass all limitations of the claimed invention, and is complete only when the idea is so clearly defined in the inventor's mind that only ordinary skill would be necessary to reduce the invention to practice, without extensive research or experimentation." *Id.* (internal citations and quotation marks omitted); *see also Slip Track Sys., Inc. v. Metal-Lite, Inc.*, 304 F.3d 1256, 1263 (Fed. Cir. 2002).

"Although the fundamental inquiry in conception is whether the inventor held the complete invention in his or her own mind, proof of conception requires objective evidence of what the inventor has disclosed to others, and what that disclosure would fairly suggest to one of ordinary skill in the art." *In re Jolley*, 308 F.3d 1317, 1323 (Fed. Cir. 2002). "Corroboration, while necessary when inventor testimony is relied on for conception, is not a requisite when a physical exhibit is presented as evidence of conception." *Slip Track Sys.*, 304 F.3d at 1263. "The trier of fact can conclude for itself what documents show, aided by testimony as to what the exhibit would mean to one skilled in the art." *Mahurkar*, 79 F.3d at 1578; *see also Price v. Symsek*, 988 F.2d 1187, 1195-96 (Fed. Cir. 1993) ("While evidence as to what the drawing would mean to one of skill in the art may assist the board in evaluating the drawing, the content of [the drawing] does not itself require corroboration.").

In cases where the question of priority is not between two issued patents but between an issued patent and the work of others, the inquiry should focus on the specific claims of the issued patent as "representing the invention at issue." *Mycogen Plant Sci. v. Monsanto Co.*, 243 F.3d 1316, 1332 (Fed. Cir. 2001). Those claims may then be used to determine whether the work performed by others constitutes a prior conception or reduction to practice that meets the limitations of the claimed invention. *See id.* at 1332-33; *Amgen, Inc. v. Chugai Pharm. Co.*, 927 F.2d 1200, 1206 (Fed. Cir. 1991).

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MasterImage argues that the prior invention of the '455 patent inventors as reflected in the March 24, 2006 drawing renders the asserted claims of the '934 patent invalid. *See* MasterImage Pet. at 39. MasterImage argues that the inventors of the '455 patent conceived of the invention described in the '455 patent at least by April 28, 2006, and that they were reasonably diligent in reducing their invention to practice through at least September 22, 2006 and no later than October 18, 2006, the filing date of the '455 patent application. *Id.* at 39-43, 51-55. MasterImage argues that the March 24, 2006 drawing satisfies all the limitations of claims 1, 6, and 11 of the '934 patent. *Id.* at 45-49. MasterImage also argues that the ID erred in finding the drawing inoperative and finding no reasonable diligence in reducing the invention to practice. *Id.* at 49-55. RealD argues MasterImage has not demonstrated by clear and convincing evidence that the '455 patent inventors conceived and diligently reduced to practice the subject matter set forth in claims 1, 6, and 11 of the '934 patent. RealD Resp. at 42.

Although MasterImage refers to the claims and figures of the '455 patent in presenting its § 102(g) argument (*see, e.g.*, MasterImage Pet. at 43-48), the question of priority here is not between the '934 patent and the '455 patent, but between the '934 patent and the work of the inventors of the '455 patent.²³ In terms of what subject matter must be conceived and reduced to practice, the Commission looks to the claims of the '934 patent. *See Mycogen Plant Sci.*, 243 F.3d at 1332-33; *Amgen*, 927 F.2d at 1206.

The Commission agrees with the ID that MasterImage's claim analysis before the ALJ focused on how the March 24, 2006 drawing corresponds to the '455 patent and lacked a detailed

²³ The ID separately addressed the question of priority between the '455 patent and the patent application to which the '934 patent claims priority under a 35 U.S.C. § 102(e) analysis. *See, e.g.*, ID at 96-99.

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discussion or analysis on how the drawing discloses each and every limitation of the asserted claims of the '934 patent. *See* ID at 103-04 (citing MasterImage Posthearing Br. at 60-67, 71-72). In its petition for review, MasterImage provides a claim analysis that relies on the same evidence it had presented to the ALJ but in a manner that more clearly connects the evidence corresponding to each claim limitation. *See* MasterImage Br. at 45-49.

The Commission concludes that MasterImage, nonetheless, has not shown that the inventors of the '455 patent conceived of the invention recited in the asserted claims of the '934 patent before September 27, 2006, the earliest alleged conception date of the '934 patent.²⁴ In particular, claim 1 of the '934 patent recites a “polarization switch subsystem operable to receive first and second light bundles from the first and second light paths respectively, and to selectively translate both the polarization states of the first and second light bundles to one of a first output [state of polarization (“SOP”)] and a second output SOP,” thus requiring the outputs of the “polarization switch subsystem” to have the same polarization state. *See, e.g.*, JX-4 ('934 patent), claim 1. MasterImage argues that this limitation is satisfied by the two ZScreens depicted in the March 26, 2006 drawing. MasterImage Pet. at 47. But the drawing merely depicts the ZScreens without any explanation or description as to their operation or output, much less the operation and output required by the “polarization switch subsystem” limitation. *See*

²⁴ RealD alleged, and MasterImage does not dispute, that the inventors of the '934 patent conceived of their invention no earlier than September 27, 2006. *See* MasterImage Pet. at 38. The '934 patent claims priority to the '602 patent. According to RealD's disclosures in this investigation, the earliest application priority date for the '602 and '934 patents (and the constructive reduction to practice date) is September 29, 2006, and the conception date, September 27, 2006. RX-253.0001-02 (RealD's Disclosure of Priority Dates and Dates of Conception and Reduction to Practice). The ID found, in the context of determining priority between the '455 patent application and the '602 patent application, the earliest priority date of the '602 patent application was September 29, 2006. ID at 96.

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CX-67C.002. As the ID noted, the drawing does not indicate whether the Zscreens are “operating in phase with respect to one another or out of phase with respect to one another,” which would show whether the outputs have the same or different polarization states.²⁵ See ID at 106; Hr’g Tr. 742:25-744:3 (Brennesholtz); RX-67C.

MasterImage’s only evidence on the operation and output of the ZScreens is the testimony of Mr. Cowan, Mr. Lipton, and Dr. Schuck. See MasterImage Pet. at 47-48. RealD argues that MasterImage cannot supplement the disclosures of the March 24, 2006 drawing with the testimony of an inventor or expert because such testimony reflects one of “extraordinary skill in the art.” RealD Resp. at 44-45, 56. RealD argues that conception requires a clearly defined idea so that “only ordinary skill” would be necessary to reduce the invention to practice. *Id.* (citing *Slip Track Sys.*, 304 F.3d at 1263). The Commission finds that the cited testimony of Mr. Cowan, Mr. Lipton, and Dr. Schuck reflects what they each personally understood the drawing to mean, and not what the drawing would mean to one of ordinary skill in the art. See, e.g., Hr’g Tr. 340:25-344:9 (Schuck) (testifying as to his understanding of the March 24, 2006 drawing). Although the testimony of Mr. Cowan and Mr. Lipton, as named inventors of the ’455 patent, may be relevant to the question of whether the complete invention had been formed in the minds of the inventors, such testimony does not constitute “objective evidence” of what they had

²⁵ According to expert testimony, driving ZScreens in phase refers to converting the input linear polarized light to circularly polarized light with the same polarization state, for example, right handed circular, at the same time, whereas driving ZScreens out of phase refers to converting linear polarized light in one ZScreen to left-handed circularly polarized light while converting linear polarized light in another ZScreen to right-handed circularly polarized light. Hr’g Tr. 742:13-24 (Brennesholtz); see also CX-1550C (Hesselink Rebuttal Witness Statement) at Q/A 123.

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disclosed to others and “what that disclosure would fairly suggest to one of ordinary skill in the art.” *See Jolley*, 308 F.3d at 1323.

RealD also argues that, as the ID found, the March 24, 2006 drawing does not constitute a prior conception of the asserted claims of the '934 patent because the drawing depicts an inoperative system that does not account for [

]. RealD Resp. at 42-43; *see* ID at 102. However, this argument improperly focuses on features not required by the asserted claims of the '934 patent. Thus, the Commission does not adopt the ID's findings on inoperability. The Commission also does not adopt the ID's finding regarding reasonable diligence in reducing the invention to practice to the extent it is premised on prior conception of the claimed invention. *See Hybritech Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1378-79 (Fed. Cir. 1986) (noting inadequate factual basis for reduction to practice of claimed invention where only evidence were notes that were “not the claimed invention”; concluding that evidence was “legally inadequate to support even a holding of *conception* of the claimed invention”).

With respect to the July 27, 2006 drawing, MasterImage argues that Dr. Brennesholtz mapped each limitation of claims 1, 6, and 11 of the '934 patent onto Figure 4 of the July 27, 2006 report and that Dr. Sharp testified that every limitation was satisfied by the report. MasterImage Pet. at 56. RealD contends that MasterImage's arguments are based on expert testimony that is wholly conclusory and contradicted by subsequent testimony that the July 27, 2006 report is silent as to the ZScreens' operation and outputs. RealD Resp. at 57-58, 60.

The Commission concludes that the July 27, 2006 report suffers from the same deficiencies as the March 24, 2006 drawing in failing to describe a “polarization switch subsystem operable to receive first and second light bundles from the first and second light paths

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respectively, and to selectively translate both the polarization states of the first and second light bundles to one of a first output SOP and a second output SOP” as required by the asserted claims of the '934 patent. The July 27, 2006 report states that [

] RX-72C.0005.

However, the report does not specify that the outputs of both ZScreens have the *same* polarization state. *See* RX-72C; JX-26C (Sharp Dep.) at 69:21-70:4. [

]. *See* CX-1031C (Sharp Witness Statement) at Q/A 57.

The testimony of Dr. Brennesholtz and Dr. Sharp does not establish by clear and convincing evidence that the inventors of the '455 patent had conceived of every limitation of the asserted claims of the '934 patent. Although Dr. Brennesholtz and Dr. Sharp concluded that the “polarization switch subsystem” limitation is met by the ZScreens, the testimony cited by MasterImage does not specifically address whether the polarization states of the outputs of the ZScreens described in the July 27, 2006 report are the same. *See* MasterImage Pet. at 56 (citing RX-588C (Third Corrected Brennesholtz Witness Statement) at Q/A 594-610, 612-620; JX-26C at 99:6-102:19; Hr’g Tr. 580:1-584:11 (Sharp)). When Dr. Brennesholtz and Dr. Sharp were questioned on this issue during the hearing, they testified that the July 27, 2006 report does not disclose whether the ZScreens were operating in phase or out of phase with respect to one another. Hr’g Tr. 742:25-744:9 (Brennesholtz); *id.* 584:12-24 (Sharp).

Accordingly, the Commission affirms, with the supplemental reasoning stated above, the ID’s finding that MasterImage failed to prove by clear and convincing evidence that claims 1, 6,

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and 11 of the '934 patent are invalid under § 102(g) in view of the '455 patent inventors' work as reflected in the March 24, 2006 drawing or the July 27, 2006 report.

2. § 103

The ID found MasterImage failed to show by clear and convincing evidence that claims 1, 6, and 11 of the '934 patent are invalid under 35 U.S.C. § 103 in view of the July 27, 2006 report. ID at 129.

Under 35 U.S.C. § 103(a), “[a] patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.”²⁶ After claims have been properly construed, the “second step in an obviousness inquiry is to determine whether the claimed invention would have been obvious as a legal matter, based on underlying factual inquiries including: (1) the scope and content of the prior art, (2) the level of ordinary skill in the art, (3) the differences between the claimed invention and the prior art; and (4) secondary considerations of non-obviousness.” *Smiths Indus. Med. Sys., Inc. v. Vital Signs, Inc.*, 183 F.3d 1347, 1354 (Fed. Cir. 1999) (citing *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966)). The Supreme Court has rejected a “rigid approach” that required for an obviousness finding an

²⁶ Because the application for the '934 patent was filed before the effective date of AIA, the Commission applies the pre-AIA version of 35 U.S.C. § 103. The Commission notes that the ID's obviousness analysis incorrectly refers to the standard for anticipation by stating that MasterImage had “failed to show by clear and convincing evidence that the July 27, 2006 Final Report *discloses* each and every limitation of claim 1 of the '934 patent.” See ID at 129 (emphasis added).

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express “teaching, suggestion, or motivation to combine references,” in favor of a non-formalistic approach that considers other factors, such as demands of the market and the technical community, interrelated teachings of multiple patents, background knowledge of one skilled in the art, and inferences and creative steps one skilled in the art would employ. *See KSR Int’l Co. v. Teleflex Inc.*, 500 U.S. 398, 415-18 (2007).

Secondary considerations, also referred to as objective evidence of nonobviousness, such as “commercial success, long-felt but unsolved need, failure of others, etc.,” may be used to understand the origin of the subject matter at issue, and may be relevant as indicia of non-obviousness. *Graham*, 383 U.S. at 17-18. Other secondary considerations may include copying by others, prior art teaching away, and professional acclaim. *See, e.g., Perkins-Elmer Corp. v. Computervision Corp.*, 732 F.2d 888, 894 (Fed. Cir. 1984). Secondary considerations must be considered in evaluating the obviousness of a claimed invention, but the existence of such evidence does not control the obviousness determination as the court must consider all of the evidence under the *Graham* factors before reaching a decision on obviousness. *Richardson-Vicks Inc. v. Upjohn Co.*, 122 F.3d 1476, 1483 (Fed. Cir. 1997).

MasterImage argues that a person of ordinary skill in the art would have found it obvious to use linear polarization switches in place of the ZScreens in the system depicted in the July 27, 2006 report to satisfy the “polarization switch subsystem” limitation recited by claim 1 of the ’934 patent. MasterImage Pet. at 57. Relying on the prior art disclosures in the ’934 and ’455 patents and Dr. Brennesholtz’s expert testimony, MasterImage argues that, at the time of the invention, using linear polarization switches and circular polarization switches interchangeably in stereoscopic cinema systems was well known. *Id.* at 58-59. MasterImage argues that the ID

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erred in focusing on the lack of a motivation to use linear polarization switches instead of ZScreens. *Id.* at 60-61.²⁷

RealD argues that MasterImage has not satisfied its burden to prove obviousness. RealD Resp. at 59. RealD argues that MasterImage has not provided any basis for a person having ordinary skill in the art to substitute linear polarization switches for the ZScreens. *Id.* at 60-63. RealD also argues that MasterImage failed to provide an element-by-element analysis or otherwise provide a *prima facie* showing of obviousness with respect to the July 27, 2006 report. *Id.* at 63.

MasterImage also argues, and RealD does not dispute, that the date for determining obviousness is the date the inventors of the '934 patent conceived of their invention in September 2006 and that the ID erred in finding that the use of linear polarization modulators in place of ZScreens was not obvious “at the time of the July 2006 Final Report.” See MasterImage Br. at 57. The Commission agrees with MasterImage. See *Allergan, Inc. v. Apotex Inc.*, 754 F.3d 952, 965 (Fed. Cir. 2014) (“The district court and the dissent commit the same error of examining the state of the art *before* the time of the invention” because “the correct question [for evaluating obviousness is] *at the time of the [challenged] patent’s invention.*”).

Nonetheless, the Commission concludes that MasterImage has not shown by clear and convincing evidence that substituting linear polarization switches for the ZScreens in Figure 4 to output light with the same polarization state would have been obvious to a person of ordinary skill in the art even in September 2006. Dr. Brennesholtz’s testimony as to the obviousness of

²⁷ MasterImage also makes various obviousness arguments based on the PTAB’s final written decision finding certain claims, including claims 1 and 6, of the '934 patent unpatentable. MasterImage PTAB Br. at 9-20. Those arguments are addressed *infra* at 56-58.

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the substitution is conclusory and not supported by the evidence. Dr. Brennesholtz testified that, “based on the disclosure of the ZScreens in the Final Report and the ’455 Patent, one of ordinary skill would have found it obvious to employ linear polarization switches like the ones admitted to be prior art by Figure 1 of the ’934 patent.” RX-588C (Third Corrected Brennesholtz Witness Statement) at Q/A 633-634. However, the prior art descriptions in the ’934 and ’455 patents do not provide such a teaching. *See, e.g.*, JX-4, col. 1, lines 43-55, Fig. 1A. The Commission further finds MasterImage’s reliance on other disclosures in the ’455 patent misplaced because those disclosures were made *after* the invention of the ’934 patent. *See* MasterImage Pet. at 62 (citing RX-588C at Q/A 227-229). The record also shows that the inventors of the ’455 patent had contemplated linear modulation but “[c]ouldn’t figure out how to make [their invention] work linear,” suggesting that using linear switches instead of ZScreens was not a straightforward substitution. *See* JX-21C (Lipton Dep.) at 103:5-104:16.²⁸ Thus, MasterImage has not provided sufficient evidence that a person of ordinary skill in the art would have had a reasonable expectation of success in using linear polarization switches instead of the ZScreens as depicted in Figure 4.

MasterImage also argues the ID erred in finding that certain secondary considerations preclude a finding of obviousness and that the ID should have considered “simultaneous invention” as secondary indicia of obviousness. MasterImage Pet. at 63-69. The Commission

²⁸ Dr. Schuck also testified that ZScreens could be driven as a linear polarization switch, but not in a way that was acceptable in the industry. Hr’g Tr. 602:5-11 (Schuck). The Commission agrees with MasterImage that the ID’s reliance on this testimony was misplaced because it relates to driving a ZScreen to operate like a linear polarization switch instead of a circular polarization switch, which is a different issue than substituting linear polarization switches for ZScreens. *See* MasterImage Pet. at 62.

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agrees with the ID that the record shows a long-felt but unresolved need for increased brightness in 3D systems, significant commercial success, and industry praise for the RealD patented XL products. *See* ID at 131 (citing evidence). The Commission further finds that RealD presented a prima facie case as to a nexus between the RealD XL products and the claimed invention based on the ID's finding that the RealD XL products satisfy the technical prong of the domestic industry prong requirement. *See Demaco Corp. v. F. Von Langsdorff Licensing Ltd.*, 851 F.2d 1387, 1392 (Fed. Cir. 1988). The burden thus shifted to MasterImage to adduce evidence to show that the commercial success was due to extraneous factors other than the patented invention. *See id.* The evidence cited by MasterImage does not satisfy its burden to show that the commercial success and industry praise of the RealD XL products was due to other factors, such as the inclusion of a telephoto lens. *See, e.g.,* Hr'g Tr. 573:5-575:2 (Sharp). The Commission also finds that the record does not show copying as an indicator of nonobviousness. In view of its finding that the work of the '455 patent does not anticipate or render obvious all of the limitations of the asserted claims of the '934 patent, the Commission rejects MasterImage's argument that the secondary consideration of simultaneous invention applies here. *See Geo M. Martin Co. v. Alliance Mach. Sys. Int'l LLC*, 618 F.3d 1294, 1302, 1305 (Fed. Cir. 2010) (reaching simultaneous invention issue where differences between the prior art and the claimed invention were "minimal").

Accordingly, the Commission affirms, with the supplemental reasoning stated above, the ID's finding that the asserted claims of the '934 patent are not invalid as obvious under § 103.

3. Effect of PTAB's Final Written Decision Finding Claims 1 and 6 of the '934 Patent Unpatentable

On April 14, 2016, after the ALJ issued the final ID but before the Commission concluded the investigation, the PTAB issued a Final Written Decision in an *inter partes* review

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(“IPR”) proceeding finding claims 1, 6-10, and 18-20 of the ’934 patent unpatentable. PTAB Final Decision, at 2.

MasterImage argues that the Commission should give deference to the PTAB’s analysis, findings, and decision, and abstain from taking action inconsistent with the PTAB’s decision. MasterImage PTAB Br. at 1. MasterImage argues that any remedial order should be suspended with respect to claims 1 and 6 of the ’934 patent pending any appellate review. *Id.* at 3, 9. MasterImage argues that (1) unless RealD appeals and prevails on appeal, the PTAB’s final decision will result in the cancellation of the claims found to be unpatentable and those claims will no longer be enforceable and (2) the PTAB’s final decision “may be given preclusive effect in that situation.” *Id.* at 9. MasterImage argues that any remedial order should be suspended with respect to claim 11 of the ’934 patent because the differences between claim 1 and claim 11 “do not materially alter the question of validity” and, therefore, issue preclusion applies. *Id.* MasterImage also argues that the PTAB’s findings are instructive and reinforce the conclusion that claims 1, 6, and 11 of the ’934 patent are invalid under §§ 102(g) and 103 in view of the prior invention by the inventors of the ’455 patent and other prior art. *Id.* at 9-18.

RealD argues that the Commission should not give deference to the PTAB’s final decision. RealD PTAB Br. at 6-7. RealD argues that the PTAB uses less stringent standards than the Commission for claim construction and validity and that, as a result, the PTAB’s findings would not be inconsistent with a Commission finding of a section 337 violation. *Id.* at 9-10. RealD argues that, under Commission and Federal Circuit precedent, the PTAB’s Final Decision has no finality or binding effect because patent claims are presumed valid until all appeals are exhausted and the claims found unpatentable by the PTAB are cancelled. *Id.* at 14; RealD PTAB Reply at 6-10. RealD states that it intends to request a rehearing of the PTAB’s

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final decision and, if necessary, appeal to the Federal Circuit. *Id.* at 8. RealD argues that MasterImage has made no attempt to show that the factors relating to a stay or issue preclusion are satisfied here. *Id.* at 14. RealD argues that MasterImage's request to suspend any remedial orders with respect to claim 11 of the '934 patent is unfounded because (1) the PTAB's final decision contained no findings with respect to that claim and (2) claim 11 is patentably distinct from the claims that the PTAB found unpatentable. *Id.* at 4-5. RealD argues that MasterImage improperly rehashes its obviousness arguments for fresh consideration and that, further, it would be improper for the Commission to adopt the PTAB's findings where the PTAB considered a record different than that before the Commission. *Id.* at 17-19; RealD PTAB Br. at 15-17. RealD argues that, in any event, issuance of a limited exclusion order and a cease and desist order is appropriate based on the ID's findings with respect to the asserted claims of the '455 and '296 patents and, thus, regardless of any deference given to the PTAB's findings, the orders would still cover the accused MasterImage products. RealD PTAB Reply at 3.

In 2011, Congress enacted the America Invents Act ("AIA"), Pub. L. No. 112-29, 125 Stat. 284 (2011). The AIA established several new PTO proceedings for the purpose of "providing quick and cost effective alternatives to litigation." H.R. Rep. No. 112-98, at 48; *see also Microsoft Corp. v. Proxyconn, Inc.*, 789 F.3d 1292, 1303 (Fed. Cir. 2015). At issue here is an IPR proceeding. IPRs are adversarial in nature. H.R. Rep. No. 112-98, at 46-47 ("The Act converts inter partes reexamination from an examinational to an adjudicative proceeding, and renames the proceeding 'inter partes review.'"). IPRs provide limited discovery, an oral hearing, and adjudication by a panel of three administrative patent judges. 35 U.S.C. § 316.

The PTAB may institute IPR upon a showing that there is a reasonable likelihood that at least one of the challenged claims is unpatentable. 35 U.S.C. § 314(a); 37 C.F.R. § 42.108(c). If

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the IPR proceeding is instituted and not dismissed, the PTAB will issue a final written decision with respect to the patentability of any patent claim challenged by the petitioner and any new claim added during the proceeding. 35 U.S.C. § 318(a). A party may file a request for rehearing within 30 days of the entry of a PTAB's final decision. 37 C.F.R. § 42.71(d)(2). A party may appeal the PTAB's final decision only to the Federal Circuit. 35 U.S.C. § 141(c).

The AIA requires the PTO to cancel any claim of the patent “finally determined to be unpatentable”:

If the Patent Trial and Appeal Board issues a final written decision under subsection (a) and the time for appeal has expired or any appeal has terminated, the Director shall issue and publish a certificate canceling any claim of the patent finally determined to be unpatentable, confirming any claim of the patent determined to be patentable, and incorporating in the patent by operation of the certificate any new or amended claim determined to be patentable.

35 U.S.C. § 318(b). A PTO's “decision to cancel a patent normally has the same effect as a district court's determination of a patent's invalidity.” *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, at *2143 (2016). The Federal Circuit explained the binding effect of a final, affirmed PTO decision determining invalidity and cancellation of a claim:

[T]here is no basis for distinguishing between the effects of a final, affirmed court decision determining invalidity and a final, affirmed PTO decision determining invalidity on a pending litigation. The latter is binding not because of collateral estoppel, but because Congress has expressly delegated reexamination authority to the PTO under a statute requiring the PTO to cancel rejected claims, and *cancellation extinguishes the underlying basis for suits based on the patent.*

Fresenius USA, Inc. v. Baxter Int'l, Inc., 721 F.3d 1330, 1339, 1344 (Fed. Cir. 2013) (emphasis added); *see also id.* at 1346 (noting that cancelled claims are “void *ab initio*”).

With this background, the Commission addresses the various arguments raised by the parties below.

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a) Issue Preclusion

The Supreme Court has held that issue preclusion can be grounded on an agency decision and that issue preclusion should apply if the ordinary elements of issue preclusion are met.

B & B Hardware, Inc. v. Hargis Indus., Inc., 135 S. Ct. 1293, 1299 (2015). RealD does not dispute that a PTAB's final decision can give rise to issue preclusion, but argues that MasterImage has not shown that the conditions for issue preclusion are present here. RealD PTAB Reply at 14-17.

The Federal Circuit and the Commission each look to the Restatement (Second) of the Law of Judgments (1980) ("Restatement") for the definitions and guidelines for the application of issue preclusion, also sometimes referred to as collateral estoppel. *See Young Eng'rs, Inc. v. Int'l Trade Comm'n*, 721 F.2d 1305, 1314 (Fed. Cir. 1983); *Certain Hybrid Electric Vehicles and Components Thereof*, Inv. No. 337-TA-688, Comm'n Op. at 4-5 (Apr. 2, 2010). The doctrine of issue preclusion applies if: (1) the issue decided in the prior litigation is identical to that before the tribunal; (2) the issue was actually litigated in the prior proceeding; (3) the resolution of the issue in the prior litigation was necessary to its resulting judgment; and (4) the party against whom collateral estoppel is asserted had a full and fair opportunity to litigate its position. *Certain Digital Set-Top Boxes and Components Thereof*, Inv. No. 337-TA-712, USITC Pub. No. 4332 (June 2012), Comm'n Op. at 5 (Sept. 23, 2011); Restatement § 27. The party seeking to apply the doctrine of issue preclusion based on a prior action bears the burden of establishing that the requirements for its application are met. *See United Access Techs., LLC v. Centurytel Broadband Servs. LLC*, 778 F.3d 1327, 1331 (Fed. Cir. 2015); *see also Young Eng'rs*, 721 F.2d at 1316.

Issue preclusion is subject to "certain well-known exceptions." *B & B Hardware*, 135 S. Ct. at 1303 (citing Restatement § 28). One of the exceptions to the general rule of issue

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preclusion is whether the “party against whom preclusion is sought had a significantly heavier burden of persuasion with respect to the issue in the initial action than in the subsequent action . . . or the adversary has a significantly heavier burden than he had in the first action.”

Restatement § 28(4). The Restatement explains that: “Since the process by which the issue was adjudicated cannot be reconstructed on the basis of a new and different burden, preclusive effect is properly denied.” *Id.* at § 28 cmt. f.

The Commission finds that MasterImage has failed to satisfy its burden for the application of issue preclusion in this investigation. MasterImage makes absolutely no attempt to show that the four elements of issue preclusion are satisfied. For example, MasterImage has not shown that the issues in both proceedings are identical. The Supreme Court has noted that, for purposes of issue preclusion, “[i]ssues are not identical if the second action involves application of a different legal standard, even though the factual setting of both suits may be the same.” *B & B Hardware*, 135 S. Ct. at 1306. The PTAB and the Commission apply different legal standards for claim construction. The PTAB gives a patent claim its “broadest reasonable construction in light of the specification,” 37 C.F.R. § 41.100, whereas the Commission applies the standard set forth by *Phillips* under which claims are construed in view of the claim language, the specification, and the prosecution history, 415 F.3d at 1317-18. The Commission is not persuaded by MasterImage’s argument that the differences in the two legal standards are “theoretical at best” because the PTAB and the ALJ essentially applied the same constructions. *See* MasterImage PTAB Reply at 4-6. MasterImage does not point to any authority stating that different legal standards are, nonetheless, the same even if they produce the same outcome.

RealD argues that, even if the requirements for issue preclusion are met here, the different burdens with respect to validity constitute an exception to application of the doctrine.

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RealD PTAB Reply at 15-16 (citing Restatement § 28(4)). A petitioner before the PTAB bears the burden of proving unpatentability of a patent claim by a preponderance of the evidence. 37 C.F.R. § 42.1(d). By contrast, a respondent challenging a patent before the Commission bears the burden of proving invalidity by clear and convincing evidence. *See, e.g., Motorola Mobility, LLC v. Int'l Trade Comm'n*, 737 F.3d 1345, 1348 (Fed. Cir. 2013). MasterImage does not address this difference other than to argue that it “has no bearing on the weight” accorded to the PTAB’s final decision. MasterImage PTAB Reply at 3-6. This response does not adequately rebut the applicability of an exception to the application of issue preclusion.

The Commission also disagrees with MasterImage’s argument that issue preclusion extends to claim 11 of the ’934 patent, which was not found to be unpatentable by the PTAB. *See* MasterImage PTAB Br. at 8-9. MasterImage argues that issue preclusion applies if “the differences between the unadjudicated patent claims and adjudicated patent claims do not materially alter the question of invalidity.” *Id.* at 8 (citing *Ohio Willow Wood Co. v. Alps South, LLC*, 735 F.3d 1333, 1342 (Fed. Cir. 2013)). However, MasterImage provides no explanation for its argument that claim 11 is not patentably distinguishable from claim 1 and that the differences between claims 1 and 11 do not materially alter the question of validity. *Id.* at 8-9. Unlike the claims at issue in *Ohio Willow Wood*, claims 1 and 11 do not merely use “slightly different language to describe substantially the same invention.” *See* 735 F.3d at 1342. Further, unlike another case cited by MasterImage, *Soverain Software LLC v. Victoria’s Secret Direct Brand Mgmt., LLC*, 778 F.3d 1311, 1319-20 (Fed. Cir. 2015), there been no finding, much less argument by MasterImage, regarding any prior art that would render the invalidity analysis for claims 1 and 11 materially the same. Further, the invalidity analysis is not materially the same in view of (1) MasterImage’s reliance on different sets of prior art to argue invalidity of claims 1

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and 11 and (2) the PTAB's decision to deny institution of an IPR on claim 11 at the same time it instituted IPR of, *inter alia*, claim 1. *See* Post-Hearing Brief of Respondents MasterImage 3D Inc. and MasterImage 3D Asia, LLC, at 98-99; IPR2015-00040, Paper No. 15, Decision, at 37 (Apr. 15, 2015).

Thus, the Commission finds that MasterImage has not shown that issue preclusion based on the PTAB's Final Written Decision applies here.

b) Effect of PTAB's Findings on the Merits

MasterImage spends much of its initial brief arguing the merits of its argument that claims 1, 6, and 11 of the '934 patent are obvious, pointing to certain findings in the PTAB's Final Written Decision as support. MasterImage argues the PTAB's finding that one of ordinary skill in the art would have had a reason to substitute linear polarization switches for the ZScreen polarization switches used in the prior invention of the '455 patent, and the PTAB's rejection of RealD's argument to the contrary, provide "persuasive bases for the Commission to make corollary findings in this investigation." *See* MasterImage PTAB Br. at 16. The Commission finds that MasterImage's arguments lack basis for at least two reasons.

First, MasterImage has not demonstrated how the PTAB's Final Written Decision impacts the Commission's analysis when applying the appropriate burden of persuasion. Many of the PTAB findings that MasterImage relies upon were made in the context of the PTAB's analysis and denial of RealD's motion to amend claims 6 and 20 of the '934 patent.²⁹ *See id.* at

²⁹ With respect to claim 6, RealD's proposed amendments included rewriting claim 6 in independent form and inserting the word "image" in front of each instance of "light bundles," "light path," and "light paths." PTAB Final Decision, at 56. The PTAB noted that certain of these amendments were inconsequential in distinguishing from the prior art as applied to the original claim 6. *Id.*

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10-17; PTAB Final Decision, at 55-67. In that context, the burden is on the patent owner to prove the patentability of a proposed claim by a preponderance of the evidence. *See* 37 C.F.R. §§ 42.1(d), 42.20(c). During the IPR proceeding, MasterImage argued that the “prior invention” of the ’455 patent would have rendered obvious the proposed claims where linear polarization switches are used instead of the ZScreens in Figure 3 of the ’455 patent. PTAB Final Decision, at 62. In response to that argument, the PTAB stated that the burden was *not on MasterImage* to prove the unpatentability of the proposed claim, and concluded that *RealD* had not shown the non-obviousness of replacing a ZScreen with a linear polarizer. *Id.* at 63, 65. As discussed above, in considering similar arguments and evidence and applying the appropriate burden of persuasion in this investigation, the Commission finds that MasterImage has not satisfied its burden under the clear and convincing standard. *See supra* at 46-49.

Second, the evidence and arguments considered by both tribunals do not appear to be entirely the same, thus further supporting the different conclusions reached by the PTAB and the Commission.³⁰ MasterImage argues that the Commission should make findings on secondary considerations similar to those made by the PTAB. MasterImage PTAB Br. at 17-18. MasterImage points to the PTAB’s finding that RealD had not shown a nexus between the claimed invention and RealD’s alleged commercial success and industry praise. *Id.*; PTAB Final Decision, at 33-34, 36-38. Certain evidence before the Commission supports a contrary finding: in particular, evidence showing that RealD’s alleged domestic industry products practice at least

³⁰ Both parties acknowledge that the prior art before the Commission is different than that before the PTAB. RealD Br. at 16-17; MasterImage Br. at 18-19 (“[T]he PTAB did not have access to March 24, 2006 Line Drawing (RX-0067C) that is central to MasterImage’s argument on [invalidity] in this investigation.”).

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one asserted claim of the '934 patent indicates that the nexus requirement is met. *See* ID at 161-64; *supra* at 49. Thus, RealD's evidence regarding the technical prong of the domestic industry requirement, which is not a required showing for an IPR proceeding, supports a different conclusion than the PTAB with respect to secondary considerations.

D. Remedy, the Public Interest, and Bonding

1. Limited Exclusion Order

The RD recommended that, in the event the Commission finds a violation of section 337, the Commission should issue a limited exclusion order covering MasterImage's accused products and any components thereof. ID at 168.

MasterImage argues the RD erred in (1) recommending that the limited exclusion order include components that are used in MasterImage's stereoscopic systems that are not accused in this investigation and (2) not recommending that the limited exclusion order include a certification provision. MasterImage Pet. at 90-92. MasterImage argues that, to exclude components from entry, there must be a finding that the components directly or indirectly infringe the asserted patents, and that the ID made no such finding. MasterImage Br. at 33-35. MasterImage argues that a certification provision is necessary to protect its right to continue to import non-accused products and non-infringing components. *Id.* at 36.

RealD argues that the RD was not in error. RealD Pet. Resp. at 95-96. RealD argues that the components excluded by the recommended limited exclusion order are "vital, critical, or fundamental to the operation of the Accused Products" and that, in view of MasterImage's representations that it imports only fully assembled products into the United States, the limited exclusion order will not encumber MasterImage from importing non-accused, fully assembled, products. *Id.* at 96. RealD argues that the evidence relied upon by MasterImage shows that only one component, an LC modulator, is used in both the accused products and a non-accused

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product, MasterImage's Wave 3D product. RealD Br. at 31. RealD argues that a certification provision is unnecessary in part because U.S. Customs and Border Protection will not have difficulty identifying the accused products by inspection. *Id.* at 33-34. However, RealD acknowledges that a certification provision would address the parties' dispute on this issue and argues that any such provision should be limited to an unassembled LC modulator and require that the importer certify that the component will be used only for MasterImage's Wave 3D product. *Id.* at 31-32; RealD Reply at 24. RealD argues that, if the Commission permits certification, "it should require a further certification that the LC modulator components will not be reinstalled or used in any way after importation, for example, by [MasterImage] or its customers, dealers, or distributors, in the [accused products]." RealD Br. at 34.

As RealD notes, the Commission routinely includes components of infringing products within the scope of its exclusion orders. *See* RealD Reply at 20-21 (citing cases). MasterImage points to one case, *Certain Marine Sonar Imaging Devices, Including Downscan and Sidescan Devices, Products Containing the Same, and Components Thereof*, Inv. No. 337-TA-921, Comm'n Op. at 79 (Jan. 6, 2016), in which the Commission excluded components from the scope of its exclusion orders based on a finding that the components were non-infringing. MasterImage Br. at 34-35. In the absence of such a finding here, there is no reason to deviate from Commission practice in including components within the scope of an exclusion order.

As to a certification provision, RealD does not raise any legitimate reasons to depart from the Commission's practice of including one in the exclusion order, and, moreover, acknowledges that a certification provision would address the parties' dispute as to components that are used in both the accused products and non-accused products. The evidence relied upon by MasterImage shows that one particular component, an LC modulator, used in the accused Horizon products is

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also used in a non-accused product, the Wave 3D. *See* MasterImage Br. at 33-34; RX-234C (Y. Lee Witness Statement) at Q/A 24; JX-24C (So Dep.) 129:17-21. RealD does not oppose a certification provision that requires MasterImage to certify that an imported, unassembled LC modulator component will not be used in the accused products and instead is only being used for MasterImage's Wave 3D product.

Thus, the Commission has determined to issue a limited exclusion order covering components and including a provision permitting certification that (1) the products being imported are not excluded from entry and (2) unassembled LC modulator components are being imported only for use in MasterImage's Wave 3D product and not for use in infringing products.

The Commission notes that it has "broad discretion in selecting the form, scope and extent of the remedy." *Viscofan, S.A. v. Int'l Trade Comm'n*, 787 F.2d 544, 548 (Fed. Cir. 1986). The Commission, as discussed above, is aware of the PTAB's final decision finding claims 1 and 6 of the '934 patent unpatentable and the potential cancellation of those claims. Moreover, RealD has represented that it intends to appeal that determination. In light of the advanced posture of the IPR proceeding and the Commission's finding of a violation as to MasterImage's products (all of which will be subject to immediate exclusion even if relief is suspended as to the '934 patent), the Commission has determined to exercise its discretion and suspend enforcement of the remedial orders as to the asserted claims of the '934 patent pending final resolution of the PTAB's Final Written Decision.³¹ *See* 35 U.S.C. § 318(b); *SSIH Equip.*

³¹ Although claim 11 of the '934 patent is not the subject of the PTAB decision, the Commission has determined to suspend enforcement as to that claim because the Commission's finding of a violation as to the '934 patent is premised in part on the ALJ's finding that the technical prong of the domestic industry is satisfied as to that patent, a finding that is based on claim 1 only.

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S.A. v. Int'l Trade Comm'n, 718 F.2d 365, 368-70 (Fed. Cir. 1983) (affirming modification of exclusion order to suspend two patents that district court found invalid); *Certain Composite Wear Components and Products Containing Same* (“*Composite Wear*”), Inv. No. 337-TA-644, Comm’n Op. at 9 (Feb. 10, 2011) (rescinding remedial orders temporarily pending resolution of district court’s invalidity decision on appeal); *Ultratec, Inc. v. Sorenson Commc’ns, Inc.*, No. 13-cv-346-bbc, 2015 WL 2248437, at *1, 4 (W.D. Wis. May 13, 2015) (staying case after jury verdict finding claims infringed and valid where PTO issued final written decision invalidating asserted claims), *writ of mandamus denied sub nom.*, *Ultratec, Inc. v. CaptionCall, LLC*, 611 F. App’x 720 (Fed. Cir. 2015). Upon final resolution, including any appeal of the PTAB’s final decision, the Commission will take appropriate action as to the ’934 patent claims.³²

2. Cease and Desist Order

The RD recommended the issuance of a cease and desist order against MasterImage. ID at 169. The RD found that MasterImage’s current inventory of [] is commercially significant in view of its total sales of [] in the United States. *Id.*

MasterImage argues that its [] inventory of demonstration units is not commercially significant because they are not for sale, for internal use or demonstration purposes only, and cannot be commercially significant compared to the thousands of RealD products in

³² In its briefs, MasterImage only once refers to a stay as an alternative to a suspension pending appellate review. *See* MasterImage Br. at 3. The party requesting a stay bears the burden of demonstrating that a stay is warranted under a four-prong test. *See Semiconductor Chips*, Comm’n Op. at 3. Because MasterImage did not analyze the four factors and appears to primarily request a suspension based on *Composite Wear* and *SSIH* (*see, e.g.*, MasterImage Br. at 3-4), the Commission does not address whether a stay would be warranted. However, the Commission notes the statutory mandate to complete section 337 investigations expeditiously. *See* 19 U.S.C. § 1337(b)(1).

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the market. MasterImage Pet. at 93. MasterImage also argues that the [] do not pose a threat to RealD's domestic industry. MasterImage Br. at 39.

RealD argues that the record supports the issuance of a cease and desist order. RealD Br. at 34-35. RealD argues that determining whether MasterImage maintains a commercially significant inventory should not take into account the size of RealD's inventory or the fact that MasterImage's units are used for demonstration purposes. *Id.* at 35; RealD Pet. Resp. at 97-98. RealD seeks a cease and desist order directed to both respondents, MasterImage 3D, Inc. and MasterImage 3D Asia, LLC. RealD Br. at 39.

Section 337(f)(1) provides that in addition to, or in lieu of, the issuance of an exclusion order, the Commission may issue a cease and desist order as a remedy for a violation of section 337. 19 U.S.C. § 1337(f)(1). Cease and desist orders are generally issued when, with respect to the imported infringing products, respondents maintain commercially significant inventories in the United States or have significant domestic operations that could undercut the remedy provided by an exclusion order. *See, e.g., Certain Protective Cases and Components Thereof*, Inv. No. 337-TA-780, USITC Pub. No. 4405 (July 2013), Comm'n Op. at 28 (Nov. 19, 2012) (citing *Certain Laser Bar Code Scanners and Scan Engines, Components Thereof, and Products Containing Same*, Inv. No. 337-TA-551, Comm'n Op. at 22 (June 14, 2007)); *Certain Agricultural Tractors, Lawn Tractors, Riding Lawnmowers, And Components Thereof*, Inv. No. 337-TA-486, USITC Pub. No. 3625, Comm'n Op. at 17 (July 14, 2003). A complainant seeking a cease and desist order must demonstrate, based on the record, that this remedy is necessary to address the violation found in the investigation so as to not undercut the relief provided by the exclusion order. *Certain Integrated Repeaters, Switches, Transceivers, and Products Containing Same*, Inv. No. 337-TA-435, USITC Pub. No. 3547 (Oct. 2002), Comm'n Op. at 27 (Aug. 16,

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2002) (“[C]omplainants bear the burden of proving that respondent has such an inventory. Because complainants failed to sustain their burden, we have determined not to issue a cease and desist order.”); *see also* H.R. Rep. No. 100-40, at 160 (1987) (“When the Commission determines that both remedies [*i.e.*, an exclusion order and cease and desist order] are necessary, it should be without legal question that the Commission has authority to order such relief.”).

The totality of the evidence shows that the [] in its inventory is significant compared to the [] MasterImage has sold in the United States. *See, e.g.*, CX-625C (Second Corrected Bakewell Witness Statement) at Q/A 163-165; RX-243C (Lohan Rebuttal Witness Statement) at Q/A 18-21; RX-247C. The evidence also shows that the [], despite MasterImage’s claim that they are for internal use only, []. *See* CX-243C at Q/A 25-26. Moreover, in discussing the issuance of a cease and desist order, the RD and the parties refer to MasterImage collectively (both foreign and domestic entities) as to who owns or controls all of the inventory in the United States. *See, e.g.*, ID at 168-69; RealD Br. at 35; MasterImage Br. at 37-39. Accordingly, the Commission has determined to issue cease and desist orders to both respondents based upon MasterImage’s commercially significant inventory of products found in violation of section 337.^{33,34} However, as noted above, the Commission has

³³ Commissioner Schmidlein supports issuance of the cease and desist orders in this investigation. She agrees with the Commission that MasterImage’s domestic inventory provides a basis for issuing the orders. She, however, finds it unnecessary to confirm the existence of a “commercially significant” inventory because a commercially significant domestic inventory is not a statutory requirement. *See* 19 U.S.C. § 1337(f)(1). Indeed, the statutory language leaves it to the discretion of the Commission and does not establish any particular test or standard for issuing a cease and desist order aside from consideration of the public interest factors. *See Gamut Trading Co. v. Int’l Trade Comm’n*, 200 F.3d 775, 784 (Fed. Cir. 1999) (explaining that the Commission has broad discretion in selecting a remedy). From a practical standpoint, Commissioner Schmidlein fails to see the value gained by requiring parties and the Commission

(continued on next page)

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determined to suspend all remedial orders as to the asserted claims of the '934 patent until final disposition of the PTAB decision, including any appeal.

3. The Public Interest

Sections 337(d) and (f) of the Tariff Act of 1930, as amended, direct the Commission to consider certain public interest factors before issuing a remedy. These public interest factors include the effect of any remedial order on the “public health and welfare, competitive conditions in the United States economy, the production of like or directly competitive articles in the United States, and United States consumers.” 19 U.S.C. §§ 1337(d), (f).

(continued)

to expend time and resources addressing the extent of domestic inventory levels as a predicate to issuing cease and desist orders. In her view, such a requirement unnecessarily carries risk for the complainant since even the presence of one infringing product in domestic inventory can undercut the exclusion order and prevent complete relief to the complainant. As the Commission opinion notes, the RD and the parties refer to the MasterImage respondents collectively in regards to ownership or control of the domestic inventory. Thus, Commissioner Schmidlein finds that the presence of some domestic inventory, regardless of the commercial significance, provides a basis to issue the cease and desist orders to both respondents.

Commissioner Schmidlein does not join the Commission’s statement that a complainant seeking a cease and desist order must demonstrate that the remedy is “necessary” to address the violation found in the investigation. It is unclear what the Commission intends to convey by the statement, but on its face it appears to limit the broad discretion granted to the Commission under section 337(f)(1). In Commissioner Schmidlein’s view, the House committee report cited by the Commission as support does not address the standard for determining whether a cease and desist order should issue. *See* H.R. Rep. No. 100-40, at 160 (1987). Instead, the committee report simply explains that the amendments to section 337(f)(1) under the Omnibus Trade and Competitiveness Act of 1988 authorize the Commission to issue both a cease and desist order and an exclusion order to remedy the same unfair act. *See id.* at 22, 159.

³⁴ Commissioner Kieff joins the Commission’s determination to issue cease and desist orders (“CDOs”) as to respondent MasterImage in this case, but does not join the reasoning offered by the Commission regarding presumptions, practice, burdens and the like, for similar reasons Commissioner Kieff recently offered in more detail in the 934 investigation. *See Certain Dental Implants*, Inv. No. 337-TA-934, Comm’n Op., Additional Views of Commissioner Kieff (May 11, 2016).

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RealD argues that the exclusion of the accused three-dimensional cinema systems would not adversely impact any of the statutory public interest factors. RealD Br. at 37-39. RealD argues that MasterImage's competitors, including RealD, can meet customer demand and provide products that are non-infringing if the accused products are excluded. *Id.* at 38-39.

MasterImage argues that U.S. consumers will continue to be harmed by RealD's "impermissible monopoly" based on its "unconscionable business model" of offering long-term licensing deals through "unsavory" stock options. MasterImage Br. at 39-40. MasterImage argues that U.S. consumers would not have access to like or directly competitive articles because MasterImage's products are "far superior to RealD's XL product and out performs [sic] the XL with respect to brightness, picture quality, and throw ratio" and because its competitors do not offer products "which operate with a comparable light efficiency." *Id.* at 40. MasterImage also argues that U.S. consumers are not served by protecting rights to invalid patents. *Id.* at 41. MasterImage acknowledges that exclusion of its products does not present any public health and welfare concerns. *Id.*

The Commission did not receive any post-RD public interest comments from the public.

The Commission is not persuaded by MasterImage's monopolization arguments. According to RealD's SEC filings, RealD offered to motion picture cinema exhibitors a 10-year option to purchase shares at \$0.00667 per share in connection with a licensing agreement in 2010. RX-206.0012 (RealD's Form S-1); RX-591C (Corrected Vander Veen Witness Statement) at Q/A 71-78. Based on the evidence cited by MasterImage, it is unclear how any of the statutory public interest factors would be affected by RealD's licensing strategy. Moreover, MasterImage points to no legal authority or analysis to support its monopoly argument that

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would preclude RealD's licenses or the issuance of an exclusion order or cease and desist orders based on the public interest factors.

MasterImage also does not substantiate its argument that its products are "superior" to RealD's XL products with any citation to evidence. *See* MasterImage Br. at 40. [

].

See, e.g., CX-602; CX-609 at REALD_ITC0145290; CX-625C (Second Corrected Bakewell Witness Statement) at Q/A 70. Thus, the record evidence does not support MasterImage's argument that the issuance of remedial orders would adversely impact U.S. consumers.

In sum, there is no evidence in the record that a limited exclusion order and cease and desist orders would have an adverse impact on the public health and welfare, competitive conditions in the United States economy, the production of like or directly competitive articles in the United States, or United States consumers. Accordingly, the Commission finds that the statutory public interest factors do not preclude the issuance of remedial orders.

4. Bonding

The RD recommended that a bond of 100 percent should be imposed during the period of Presidential review. ID at 170. The RD found that any sales of the accused products in the United States would likely injure RealD because each accused product sold would adversely impact RealD's ability to secure a multi-year license agreement. *Id.* at 170-71. The RD found that a bond rate cannot be calculated using a price differential or a reasonable royalty due to significant differences between the parties' business models and pricing strategies. *Id.* at 171.

MasterImage argues that the RD erred in recommending a bond of 100 percent where RealD has not shown potential injury during the Presidential review period and RealD never attempted to determine a price differential despite the pricing evidence in the record.

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MasterImage Pet. at 94-97; MasterImage Br. at 42. As to the lack of injury, MasterImage argues that RealD was successful in signing []-year leases before there was any competition in the stereoscopic projection market by giving exhibitors undervalued stock options and that there is no evidence that RealD could continue to sign these long-term licenses today. MasterImage Br. at 42. As to the amount of the bond, MasterImage argues that RealD simply assumed a 100 percent was appropriate. *Id.* at 43. MasterImage argues that RealD had all the necessary documents to do an economic analysis, but “never analyzed the []” and did not “compare the revenues and costs per product to MasterImage’s retail cost per product.” *Id.*

RealD argues that the RD’s bond recommendation is not in error. RealD Pet. Resp. at 99. RealD argues that a bond of 100 percent is appropriate based on testimony that calculating a price differential was impractical due to significant differences between RealD’s and MasterImage’s business models and pricing strategies. *Id.*

If the Commission enters an exclusion order, a respondent may continue to import and sell its products during the 60-day period of Presidential review under a bond in an amount determined by the Commission to be “sufficient to protect the complainant from any injury.” 19 U.S.C. § 1337(j)(3); *see also* 19 C.F.R. § 210.50(a)(3). When reliable price information is available in the record, the Commission has often set the bond in an amount that would eliminate the price differential between the domestic product and the imported, infringing product. *See Certain Microsphere Adhesives, Processes for Making Same, and Products Containing Same, Including Self-stick Repositionable Notes*, Inv. No. 337-TA-366, USITC Pub. No. 2949 (Jan. 1996), Comm’n Op. at 24 (Jan. 16, 1996). The Commission also has used a reasonable royalty rate to set the bond amount where a reasonable royalty rate could be ascertained from the evidence in the record. *See, e.g., Certain Audio Digital-to-Analog Converters and Products*

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Containing Same, Inv. No. 337-TA-499, Comm'n Op. at 25 (Mar. 3, 2005). Where the record establishes that the calculation of a price differential is impractical or there is insufficient evidence in the record to determine a reasonable royalty, the Commission has imposed a 100 percent bond. *See, e.g., Certain Liquid Crystal Display Modules, Products Containing Same, and Methods Using the Same*, Inv. No. 337-TA-634, Comm'n Op. at 6-7 (Nov. 24, 2009). The complainant bears the burden of establishing its request for an appropriate bond amount to be imposed on respondents' continued activities during the Presidential review period based on the record. *Certain Rubber Antidegradants, Components Thereof, and Products Containing Same*, Inv. No. 337-TA-533, USITC Pub. No. 3975 (Apr. 2008), Comm'n Op. at 39-40 (July 21, 2006) ("In our view, the complainant has the burden of supporting any proposition it advances, including the amount of the bond.").

MasterImage takes issue with the fact that RealD did not present direct evidence of any potential injury. The RD's finding that any sale of an accused product would adversely impact RealD's ability to secure a multi-year license agreement is reasonable based on the record evidence. *See* ID at 170-71. As RealD notes, for every unit MasterImage installs in the United States, [

]. *See* RealD Br. at 36.

RealD's expert, Mr. Bakewell, explained the impracticality of determining a bond amount based upon a price comparison between the parties' products: [

] CX-625C (Second Corrected Bakewell Witness Statement) at Q/A 171. In particular, [

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] *Id.* at Q/A 172-173. Mr. Bakewell also explained his inability to determine a reasonable royalty rate: RealD's licenses cannot be compared to MasterImage's sales, and he could not find any [].
Id. at Q/A 175. Thus, contrary to MasterImage's assertions, RealD's expert reviewed the terms of RealD's licenses. Hr'g Tr. 359:2-361:18 (Bakewell). MasterImage also cites no authority requiring the specific analysis it complains did not take place. *See* MasterImage Br. at 43.

The record establishes that the calculation of a price differential is impractical and that there is insufficient evidence in the record to determine a reasonable royalty. There is no evidence of any prices associated with RealD's products to compare to MasterImage's products. Nor is there any evidence of a reasonable royalty rate that can be applied to MasterImage's products. MasterImage is unclear as to how the license terms described above—[]—can be used to determine an appropriate bond amount.

Accordingly, the Commission has determined to set a bond in the amount of 100 percent of the entered value of the respondents' infringing products during the period of Presidential review.

IV. CONCLUSION

The Commission finds a violation of section 337 with respect to the '455, '296, and '934 patents. The Commission adopts all findings and conclusions in the final ID that are not inconsistent with this opinion.

By order of the Commission.


A handwritten signature in black ink, appearing to read 'Lisa R. Barton', with a stylized flourish at the end.

Lisa R. Barton
Secretary to the Commission

Issued: August 23, 2016

PUBLIC CERTIFICATE OF SERVICE

I, Lisa R. Barton, hereby certify that the attached **COMMISSION OPINION** has been served on the Office of Unfair Import Investigations, and the following parties, as indicated, on **August 23, 2016**.



Lisa R. Barton, Secretary
U.S. International Trade Commission
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UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C.

In the Matter of

**CERTAIN THREE-DIMENSIONAL
CINEMA SYSTEMS AND
COMPONENTS THEREOF**

Investigation No. 337-TA-939

**NOTICE OF COMMISSION DETERMINATION TO REVIEW
THE FINAL INITIAL DETERMINATION IN PART;
SCHEDULE FOR FILING WRITTEN SUBMISSIONS ON THE ISSUES
UNDER REVIEW AND ON REMEDY, PUBLIC INTEREST, AND BONDING**

AGENCY: U.S. International Trade Commission.

ACTION: Notice.

SUMMARY: Notice is hereby given that the U.S. International Trade Commission has determined to review-in-part the final initial determination (“ID”) issued by the presiding administrative law judge (“ALJ”) in the above-captioned investigation on December 16, 2015. The Commission requests certain briefing from the parties on the issues under review, as indicated in this notice. The Commission also requests briefing from the parties and interested persons on the issues of remedy, the public interest, and bonding.

FOR FURTHER INFORMATION CONTACT: Lucy Grace D. Noyola, Office of the General Counsel, U.S. International Trade Commission, 500 E Street, S.W., Washington, D.C. 20436, telephone 202-205-3438. Copies of non-confidential documents filed in connection with this investigation are or will be available for inspection during official business hours (8:45 a.m. to 5:15 p.m.) in the Office of the Secretary, U.S. International Trade Commission, 500 E Street, S.W., Washington, D.C. 20436, telephone 202-205-2000. General information concerning the Commission may also be obtained by accessing its Internet server (<http://www.usitc.gov>). The public record for this investigation may be viewed on the Commission’s electronic docket (EDIS) at <http://edis.usitc.gov>. Hearing-impaired persons are advised that information on this matter can be obtained by contacting the Commission’s TDD terminal on 202-205-1810.

SUPPLEMENTARY INFORMATION: The Commission instituted this investigation on December 12, 2014, based on a complaint filed by RealD, Inc. of Beverly Hills, California (“RealD”). 79 *Fed. Reg.* 73902-03. The complaint alleges violations of section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337, in the importation into the United States, the sale for importation, and the sale within the United States after importation of certain three-dimensional cinema systems and components thereof that infringe certain claims of U.S. Patent Nos. 7,905,602; 8,220,934; 7,857,455; and 7,959,296. *Id.* at 73902. The notice of investigation named as respondents MasterImage 3D, Inc. of Sherman Oaks, California, and MasterImage 3D Asia, LLC of Seoul, Republic of Korea (collectively, “MasterImage”). *Id.* at 73903. The Office of Unfair Import Investigations was not named as a party to the investigation. *Id.*

On December 16, 2015, the ALJ issued a final ID finding a violation of section 337 with respect to all three asserted patents. The ALJ found that the asserted claims of each patent are infringed. The ALJ found that the asserted claims of the asserted patents are not invalid for anticipation or obviousness. The ALJ found that the asserted claims of the ’455 patent satisfy the written description and the definiteness requirements of 35 U.S.C. § 112. The ALJ found that the asserted patents are not unenforceable due to inequitable conduct. The ALJ found that the ’296 patent properly named all inventors of that patent. The ALJ found that the technical prong of the domestic industry requirement was satisfied for the asserted patents. The ALJ also issued a Recommended Determination on Remedy and Bonding (“RD”), recommending that a limited exclusion order and a cease and desist order should issue and that a bond of 100 percent should be imposed during the period of presidential review.

On December 29, 2015, MasterImage filed a petition for review challenging various findings in the final ID. On January 6, 2016, RealD filed a response to MasterImage’s petition. On January 15, 2016, and January 19, 2016, MasterImage and RealD respectively filed post-RD statements on the public interest under Commission Rule 210.50(a)(4). The Commission did not receive any post-RD public interest comments from the public in response to the Commission notice issued on December 22, 2015. 80 *Fed. Reg.* 80795 (Dec. 28, 2015).

Having examined the record of this investigation, including the ID, the petitions for review, and the responses thereto, the Commission has determined to review in part the ALJ’s determination of a section 337 violation. Specifically, the Commission has determined to review (1) the ID’s construction of the “uniformly modulate” limitation recited in claims 1 and 17 of the ’455 patent; (2) the ID’s infringement findings with respect to the asserted claims of the ’455 patent; (3) the ID’s findings on validity of the asserted claims of the ’455 patent; (4) the ID’s finding of proper inventorship of the ’296 patent; (5) the ID’s findings on validity of the asserted claims of the ’934 patent; and (6) the ID’s finding regarding the technical prong of the domestic industry requirement with respect to the ’455 patent.

The Commission has determined not to review the remaining issues decided in the final ID.

In connection with its review, the Commission requests responses to the following questions only. The parties are requested to brief their positions with reference to the applicable law and the existing evidentiary record.

1. Discuss whether the accused products satisfy the limitation “uniformly modulate” recited in claims 1 and 17 of the ’455 patent if the limitation is construed as: “operating on all input light to change it from one polarization state to another polarization state.”
2. Applying the construction in Question No. 1, discuss whether the prior art discloses or suggests the limitation “uniformly modulate.”
3. Applying the construction in Question No. 1, discuss whether the alleged domestic industry products satisfy the limitation “uniformly modulate.”
4. Discuss whether the written description requirement under § 112, ¶ 1 is satisfied with respect to the asserted claims of the ’455 patent that do not require an element for rotating the polarization state of the light energy in one path to match the polarization state of the light energy in the other path. Explain the role of such rotation in improving image brightness. In addition, discuss the necessity of such rotation where a single polarization modulator is used.
5. Discuss any authorities that have excluded from the scope of a limited exclusion order components of an infringing product where those components are also used in non-adjudicated products, and discuss whether those authorities apply in this investigation. In addition, discuss whether a certification provision in a limited exclusion order would address the parties’ dispute as to such components.

In connection with the final disposition of this investigation, the Commission may (1) issue an order that could result in the exclusion of the subject articles from entry into the United States, and/or (2) issue a cease and desist order that could result in the respondent being required to cease and desist from engaging in unfair acts in the importation and sale of such articles.

Accordingly, the Commission is interested in receiving written submissions that address the form of remedy, if any, that should be ordered. If a party seeks exclusion of an article from entry into the United States for purposes other than entry for consumption, the party should so indicate and provide information establishing that activities involving other types of entry either are adversely affecting it or likely to do so. For background, see *Certain Devices for Connecting Computers via Telephone Lines*, Inv. No. 337-TA-360, USITC Pub. No. 2843 (Dec. 1994) (Commission Opinion).

If the Commission contemplates some form of remedy, it must consider the effects of that remedy upon the public interest. The factors the Commission will consider include the effect that an exclusion order and/or cease and desist order would have on (1) the public health and welfare, (2) competitive conditions in the U.S. economy, (3) U.S. production of articles that are like or directly competitive with those that are subject to investigation, and (4) U.S. consumers. The Commission is therefore interested in receiving written submissions that address the aforementioned public interest factors in the context of this investigation.

If the Commission orders some form of remedy, the U.S. Trade Representative, as delegated by the President, has 60 days to approve or disapprove the Commission's action. *See* Presidential Memorandum of July 21, 2005, 70 *Fed. Reg.* 43251 (July 26, 2005). During this period, the subject articles would be entitled to enter the United States under bond, in an amount determined by the Commission and prescribed by the Secretary of the Treasury. The Commission is therefore interested in receiving submissions concerning the amount of the bond that should be imposed if a remedy is ordered.

WRITTEN SUBMISSIONS: The parties to the investigation are requested to file written submissions on all of the issues identified in this notice. Parties to the investigation, interested government agencies, and any other interested parties are encouraged to file written submissions on the issues of remedy, the public interest, and bonding. Such submissions should address the recommended determination by the ALJ on remedy and bonding. Complainant RealD is also requested to submit proposed remedial orders for the Commission's consideration. RealD is also requested to state the date that the asserted patents expire and the HTSUS numbers under which the accused products are imported, and provide identification information for all known importers of the subject articles. Initial written submissions and proposed remedial orders must be filed no later than close of business on **Tuesday, March 1, 2016**. Initial written submissions by the parties shall be no more than 50 pages, excluding any attachments or exhibits. Reply submissions must be filed no later than the close of business on **Friday, March 11, 2016**. Reply submissions by the parties shall be no more than 30 pages, excluding any attachments or exhibits. No further submissions on these issues will be permitted unless otherwise ordered by the Commission. Persons filing written submissions must file the original document electronically on or before the deadlines stated above and submit 8 true paper copies to the Office of the Secretary by noon the next day pursuant to section 210.4(f) of the Commission's Rules of Practice and Procedure (19 C.F.R. 210.4(f)). Submissions should refer to the investigation number ("Inv. No. 337-TA-939") in a prominent place on the cover page and/or the first page. (See Handbook for Electronic Filing Procedures, http://www.usitc.gov/secretary/fed_reg_notices/rules/handbook_on_electronic_filing.pdf). Persons with questions regarding filing should contact the Secretary at (202) 205-2000.

Any person desiring to submit a document to the Commission in confidence must request confidential treatment. All such requests should be directed to the Secretary to the Commission and must include a full statement of the reasons why the Commission should grant such treatment. *See* 19 C.F.R. § 201.6. Documents for which confidential treatment by the Commission is properly sought will be treated accordingly. A redacted non-confidential version of the document must also be filed simultaneously with any confidential filing. All nonconfidential written submissions will be available for public inspection at the Office of the Secretary and on EDIS.

The authority for the Commission's determination is contained in section 337 of the Tariff Act of 1930, as amended (19 U.S.C. § 1337), and in Part 210 of the Commission's Rules of Practice and Procedure (19 C.F.R. Part 210).

By order of the Commission.

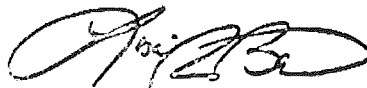
A handwritten signature in black ink, appearing to read 'Lisa R. Barton', written in a cursive style.

Lisa R. Barton
Secretary to the Commission

Issued: February 16, 2016

PUBLIC CERTIFICATE OF SERVICE

I, Lisa R. Barton, hereby certify that the attached **NOTICE** has been served on the Office of Unfair Import Investigations, and the following parties, as indicated, on **February 16, 2016**.



Lisa R. Barton, Secretary
U.S. International Trade Commission
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PUBLIC VERSION

UNITED STATES INTERNATIONAL TRADE COMMISSION

Washington, D.C.

In the Matter of

CERTAIN THREE-DIMENSIONAL CINEMA
SYSTEMS AND COMPONENTS THEREOF

Inv. No. 337-TA-939

INITIAL DETERMINATION ON VIOLATION OF SECTION 337 AND
RECOMMENDED DETERMINATION ON REMEDY AND BOND

Administrative Law Judge Theodore R. Essex

(December 16, 2015)

Appearances:

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John Flaim, Esq., Jay Utley, Esq., Benjamin Kelly, Esq., and Erin Choi, Esq. of Baker & McKenzie LLP of Dallas, TX.

For Respondents MasterImage 3D, Inc. and MasterImage 3D Asia, LLC:

Kecia J. Reynolds, Esq., William Atkins, Esq., Sean Weinman, Esq., and Michael Heins of Pillsbury Winthrop Shaw Pittman LLP of McLean, VA.

Evan Finkel, Esq., Roger Wise, Esq., and Michael Horikawa, Esq. of Pillsbury Winthrop Shaw Pittman LLP of Los Angeles, CA.

PUBLIC VERSION

Pursuant to the Notice of Investigation, 79 Fed. Reg. 73902 (December 12, 2014), this is the Initial Determination in the matter of *Certain Three-Dimensional Cinema Systems and Components Thereof*, United States International Trade Commission Investigation No. 337-TA-939. See 19 C.F.R. § 210.42(a).

It is held that a violation of section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337, has occurred in the importation into the United States, the sale for importation, or the sale within the United States after importation of certain three-dimensional cinema systems and components thereof by reason of infringement of the asserted claims of U.S. Patent No. 7,857,455, U.S. Patent No. 7,959,296, and U.S. Patent No. 8,220,934.

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The following abbreviations may be used in this Initial Determination:

CDX	Complainant's demonstrative exhibit
CIB	Complainant's initial post-hearing brief
CPB	Complainant's pre-hearing brief
CPX	Complainant's physical exhibit
CRB	Complainant's reply post-hearing brief
CX	Complainant's exhibit
Dep.	Deposition
JX	Joint Exhibit
RDX	Respondent's demonstrative exhibit
RIB	Respondent's initial post-hearing brief
RPX	Respondent's physical exhibit
RPB	Respondent's Pre-hearing brief
RRB	Respondent's reply post-hearing brief
RRX	Respondent's rebuttal exhibit
RX	Respondent's exhibit
Tr.	Transcript

I. BACKGROUND

A. Institution and Procedural History of This Investigation

By publication of a notice in the *Federal Register* on December 12, 2014, pursuant to subsection (b) of section 337 of the Tariff Act of 1930, as amended, the Commission instituted Investigation No. 337-TA-939 with respect to U.S. Patent Nos. 7,905,602 ("the '602 patent"), 8,220,934 ("the '934 patent"), 7,857,455 ("the '455 patent"), and 7,959,296 ("the '296 patent") to determine:

whether there is a violation of subsection (a)(1)(B) of section 337 in the importation into the United States, the sale for importation, or the sale within the United States after importation of certain three-dimensional cinema systems and components thereof by reason of infringement of one or more of claims 1–2, 4, 6, 8, 10, 11, 14, 15, 17, 20, 21, and 23 of the '602 patent; claims 1, 6, 8, 10–12, 15, and 17 of the '934 patent; claims 1–3, 9–11, 13–15, 17–19, and 21 of the '455 patent; and claims 1, 2, 7, 8, 11, 12, and 17 of the '296 patent, and whether an industry in the United States exists as required by subsection (a)(2) of section 337.

(79 Fed. Reg. 73903 (December 12, 2014).)

The complainant is RealD Inc. ("Complainant" or "RealD") of Beverly Hills, CA . (79 Fed. Reg. 79903 (December 12, 2014).) The Notice of Investigation named the respondents as MasterImage 3D, Inc. of Sherman Oaks, CA, and MasterImage 3D Asia, LLC Seoul, Republic of Korea (collectively, "Respondents" or "MasterImage"). (*Id.*) The Office of Unfair Import Investigations did not participate in this investigation. (*Id.*)

On July 2, 2015, the ALJ granted RealD's motion to withdraw from the Investigation claims 8, 20, 21 and 23 of the '602 patent; claims 8, 10 and 17 of the '934 patent; claim 14 of the '455 patent; and claim 17 of the '296 patent. (*See* Order 6 (July 2, 2015); *see also* *Notice of Commission Decision Not to Review an Initial Determination Terminating-In-Part the Investigation Based on a Partial Withdrawal of the Complaint* (July 23, 2015).)

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On August 3, 2015, the ALJ granted RealD's motion to withdraw from the Investigation claims 1, 2, 4, 6, 10, 11, 14, 15, and 17 of the '602 patent and claims 12 and 15 of the '934 patent. (*See* Order No. 7 (August 3, 2015); *see also* *Notice of Commission Decision Not to Review an Initial Determination Terminating-In-Part the Investigation Based on a Partial Withdrawal of the Complaint* (August 20, 2015).) As such, the '602 patent has been entirely withdrawn from this Investigation. Accordingly, claims 1–3, 9–11, 13, 15, 17–19, and 21 of the '455 patent; claims 1, 2, 7, 8, 11, and 12 of the '296 patent; and claims 1, 6, and 11 of the '934 patent remain in this Investigation.

On September 25, 2015, the Commission determined to review-in-part an Initial Determination ("ID") (Order No. 9 (August 20, 2015)) granting-in-part RealD's motion for summary determination that a domestic industry exists. While the Commission found that there are genuine issues of material fact as to whether RealD's investments in equipment are significant and, therefore, reversed the ALJ's summary determination with respect to RealD's investment in equipment, the Commission determined not to review the remaining findings in the ID, including the findings that RealD has shown that it satisfies the economic prong of the domestic industry requirement through its significant investments in plant, significant investments in labor, and substantial investments in engineering, research, and development. Accordingly, RealD has satisfied the economic prong of the domestic industry requirement. (*See Notice of Commission Decision to Review-In-Part An Initial Determination Granting-In-Part a Motion for a Summary Determination that a Domestic Industry Exists, and, On Review, to Reverse an Issue* (September 25, 2015); *see also* Order No. 9 (Aug. 20, 2015).)

The evidentiary hearing in this investigation was held on September 14 through September 17, 2015.

B. The Parties

1. Complainants

RealD is a Delaware corporation, with its principal place of business at 100 North Crescent Drive, Suite 200, Beverly Hills, California 90210. (CIB at 3.)

2. Respondents

MasterImage 3D Inc. is a Delaware corporation with its headquarters located in Sherman Oaks, California. (RIB at 1.) MasterImage 3D Asia, LLC is a wholly-owned subsidiary of MasterImage 3D Inc. (*Id.*) MasterImage 3D Asia, LLC is located in Seoul, Republic of Korea. (*Id.*)

C. The Patents at Issue and Overview of the Technology

1. The '455 Patent

U.S. Patent No. 7,857,455 (“the '455 patent” or “the '455 Patent”), entitled “Combining P and S Rays For Bright Stereoscopic Projection,” was filed on October 18, 2006 and issued on December 28, 2010. (JX-0001.) Matt Cowan of Bloomingdale, California; Lenny Lipton of Los Angeles, California; and Jerry Carollo of Carlsbad, California are the named inventors of the '455 patent. (*Id.*) The '455 patent is directed to a multiple path stereoscopic projection system whereby “the system comprises a polarizing splitting element configured to receive image light energy and split the image light energy received into a primary path and a secondary path, a reflector in the secondary path, and a polarization modulator or polarization modulator arrangement positioned in the primary path and configured to modulate the primary path of light energy.” (*Id.* at Abstract.)

The asserted claims of the '455 patent are claims 1-3, 9-11, 13, 15, 17-19, and 21. (JX-0001.) The asserted claims read as follows:

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1. An apparatus for projecting stereoscopic images, comprising:

a polarizing splitting element configured to receive image light energy and split the image light energy received into a primary path of light energy transmitted along a primary path and a secondary path of light energy transmitted along a secondary path;

a reflector configured to receive path light energy from one of primary path energy and secondary path light energy and to direct said path light energy toward a surface; and

a first polarization modulator positioned in the primary path and configured to receive the primary path of light energy, uniformly modulate the primary path of light energy into primary path modulated light energy, and transmit primary path modulated light energy toward the surface.

2. The apparatus of claim 1, further comprising a retarder configured to receive the secondary path of light energy and transmit retarded secondary path light energy.

3. The apparatus of claim 1, wherein the surface comprises a projection screen.

9. The apparatus of claim 1, wherein the polarization modulator comprises a push-pull modulator.

10. The apparatus of claim 1, wherein the polarizing splitting element comprises one from a group comprising:

a polarizing beamsplitter;

a wire grid polarizer; and

a MacNeille prism.

11. The apparatus of claim 1, further comprising a primary path element arrangement configured to substantially optically superimpose light energy transmission between the second path and the first path.

13. The apparatus of claim 2, wherein the retarder is a half wave retarder.

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15. The apparatus of claim 9, wherein the push pull modulator comprises an arrangement of two pi-cells having axes crossed and driven out of phase.

17. An apparatus for projecting stereoscopic images, comprising:

a splitter configured to split the image received into a primary path and a secondary path;

a reflector positioned in the secondary path configured to reflect secondary path light energy; and

a polarization modulator arrangement comprising at least one polarization modulator positioned in the primary path and configured to uniformly modulate the primary path of light energy;

wherein the polarization modulator arrangement additionally uniformly modulates secondary path light energy.

18. The apparatus of claim 17, further comprising a retarder positioned in one of the primary path and the secondary path and configured to rotate light energy received.

19. The apparatus of claim 17, wherein the polarization modulator arrangement comprises two polarization modulators, one in the primary path and one in the secondary path.

21. The apparatus of claim 17, further comprising elements configured to substantially optically superimpose light energy transmission between the primary path and the secondary path.

(JX-0001.)

2. The '296 Patent

U.S. Patent No. 7,959,296 (“the '296 patent” or “the '296 Patent”), entitled “Combining P and S Rays For Bright Stereoscopic Projection,” was filed on December 27, 2010, and issued on June 14, 2011. (JX-0003.) Matt Cowan of Bloomingdale, California; Lenny Lipton of Los Angeles, California; and Jerry Carollo of Carlsbad, California are the named inventors of the '296 patent. (*Id.*) The '296 patent generally discloses a multiple path stereoscopic projection system whereby the “system comprises a polarizing splitting element configured to receive

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image light energy and split the image light energy received into a primary path and a secondary path, a reflector in the secondary path, and a polarization modulator or polarization modulator arrangement positioned in the primary path and configured to modulate the primary path of light energy.” (*Id.* at Abstract.)

The asserted claims of the '296 patent are claims 1, 2, 7, 8, 11, and 12. (JX-0003.) The asserted claims read as follows:

1. An apparatus for projecting stereoscopic images, comprising:

a first polarizing splitting element configured to receive first image light energy and split the first image light energy received along a first primary path and along a first secondary path;

a first reflector configured to receive one of first primary path of light energy and first secondary path of light energy and to reflect the one of first primary path of light energy and first secondary path of light energy toward a surface;

a first rotator configured to receive one of first primary path of light energy and first secondary path of light energy and to rotate the one of first primary path of light energy and first secondary path of light energy;

a second polarizing splitting element configured to receive second image light energy and split the second image light energy received along a second primary path and along a second secondary path;

a second reflector configured to receive one of second primary path of light energy and second secondary path of light energy and to reflect the one of second primary path of light energy and second secondary path of light energy toward a surface; and

a second rotator configured to receive one of second primary path of light energy and second secondary path of light energy and to rotate the one of second primary path of light energy and second secondary path of light energy.

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2. The apparatus of claim 1, wherein the first and second rotators are configured to rotate the one of first primary path of light energy and first secondary path of light energy and the one of second primary path of light energy and second secondary path of light energy by 90 degrees.

7. The apparatus of claim 1, wherein the first rotator is positioned between the first polarizing splitting element and the surface.

8. The apparatus of claim 1, wherein the second rotator is positioned between the second polarizing splitting element and the surface.

11. The apparatus of claim 1, wherein the surface comprises a projection screen.

12. The apparatus of claim 1, wherein the polarizing splitting element comprises one from a group comprising:

a polarizing beamsplitter;

a wire grid polarizer; and

a MacNeille prism.

(JX-0003.)

3. The '934 Patent

U.S. Patent No. 8,220,934 (“the '934 patent” or “the '934 Patent”), entitled “Polarization Conversion Systems For Stereoscopic Projection,” was filed on March 14, 2011, and issued on July 17, 2012. (*See* JX-0004). Miller H. Schuck of Erie, Colorado; Michael G. Robinson of Boulder, Colorado; and Gary D. Sharp of Boulder, Colorado are the named inventors of the '934 patent. (*Id.*) The '934 patent generally discloses a polarization conversion system (PCS), which includes a polarizing beam splitter, a polarization rotating element, a reflecting element, and a polarization switch. (*Id.* at Abstract.)

The asserted claims of the '934 patent are claims 1, 6, and 11. The asserted claims read as follows:

1. A stereoscopic system comprising:

a polarization beam splitter (PBS) operable to direct first light bundles having a first state of polarization (SOP) along a first light path, and direct second light bundles having a second SOP along a second light path;

a polarization rotator located on the second light path, the polarization rotator being operable to translate the second SOP to the first SOP; and

a polarization switch subsystem operable to receive first and second light bundles from the first and second light paths respectively, and to selectively translate both the polarization states of the first and second light bundles to one of a first output SOP and a second output SOP.

6. The stereoscopic system of claim 1, wherein the polarization switch subsystem selects between the first and the second output SOP in synchronization with transmission of an image frame by a projector.

11. The stereoscopic system of claim 1, wherein the polarization switch subsystem comprises first and second polarization switch panels, the first polarization switch panel receiving light from the first light path, and the second polarization switch panel receiving light from the second light path.

(JX-0004.)

D. The Products At Issue

1. MasterImage Accused Products

RealD accuses the following MasterImage products of infringing the asserted claims of the patents-in-suit: Horizon 3D, 3D S, 3D Dual, and 3D S Dual, and [REDACTED]

[REDACTED]. (See CIB at 4.)

II. IMPORTATION OR SALE

Section 337 of the Tariff Act prohibits the importation into the United States, the sale for importation, or the sale within the United States after importation by the owner, importer, or consignees of articles that infringe a valid and enforceable United States patent. *See* 19 U.S.C. § 1337(a)(1)(B). A complainant “need only prove importation of a single accused product to satisfy the importation element.” *Certain Purple Protective Gloves*, 337-TA-500, Order No. 17 (September 23, 2004).

[REDACTED]

[REDACTED]

[REDACTED] (See JX-0032 ¶ 7.) Therefore, the ALJ finds that the importation requirement for purposes of Section 337 has been satisfied.

III. JURISDICTION

In order to have the power to decide a case, a court or agency must have both subject matter jurisdiction and jurisdiction over either the parties or the property involved. (*See Certain Steel Rod Treating Apparatus and Components Thereof*, Inv. No. 337-TA-97, Commission Memorandum Opinion, 215 U.S.P.Q. 229, 231 (1981).) For the reasons discussed below, the ALJ finds the Commission has jurisdiction over this investigation.

Section 337 declares unlawful the importation, the sale for importation, or the sale after importation into the United States of articles that infringe a valid and enforceable United States patent by the owner, importer, or consignee of the articles, if an industry relating to the articles protected by the patent exists or is in the process of being established in the United States. (*See* 19 U.S.C. §§ 1337(a)(1)(B)(i) and (a)(2).) Pursuant to Section 337, the Commission shall

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investigate alleged violations of the Section and hear and decide actions involving those alleged violations.

RealD submits that given MasterImage's stipulation of importation, Section 337 of the Tariff Act of 1930, as amended, confers subject matter jurisdiction on the Commission to investigate and, if appropriate, to provide a remedy for unfair acts and unfair methods of competition associated with acts of importation into the U.S. of articles that infringe a valid and enforceable U. S. patent. (CIB at 5.)

MasterImage submits that it has participated in this Investigation and does not dispute that the Commission has *in personam* jurisdiction. (RIB at 5.) Additionally, MasterImage submits that it does not dispute that it manufactures the accused products, a component of a three-dimensional cinema system, outside of the United States and imports the accused products and components thereof into the United States thereby conferring *in rem* jurisdiction. (*Id.*)

As set forth *supra* in Section II, the importation requirement has been satisfied. Furthermore, MasterImage has appeared and participated fully in this Investigation and does not dispute the Commission's jurisdiction. Accordingly, the ALJ finds that MasterImage has submitted to the jurisdiction of the Commission. (*See Certain Miniature Hacksaws*, Inv. No. 337-TA-237, Pub. No. 1948, Initial Determination at 4, 1986 WL 379287 (U.S.I.T.C., October 15, 1986) (unreviewed by Commission in relevant part).) Thus, the ALJ finds that the Commission has jurisdiction under Section 337 to hear this Investigation and has *in personam* jurisdiction over MasterImage.

The ALJ also finds that the Commission has *in rem* jurisdiction over the products at issue by virtue of the fact that accused products and components thereof have been imported into the United States. (*See Enercon*, 151 F.3d at 1380; *Sealed Air Corp. v. International Trade Comm'n*,

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645 F.2d 976, 985 (C.C.P.A. 1981) (An exclusion order operates against goods, not parties, and therefore is not contingent upon a determination of personal jurisdiction over a foreign manufacturer.)

IV. CLAIM CONSTRUCTION

A. Legal Standard

Pursuant to the Commission's Notice of Investigation, this investigation is a patent-based investigation. (*See* 79 Fed. Reg. 73903 (December 12, 2014).) Accordingly, all of the unfair acts alleged by RealD to have occurred are instances of alleged infringement of the '455, the '296 and the '934 patents. Claim interpretation is a question of law. (*Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed. Cir. 1995) (*en banc*), *aff'd*, 517 U.S. 370 (1996); *Cybor Corp. v. FAS Techs., Inc.*, 138 F.3d 1448, 1455 (Fed. Cir. 1998).) Second, a factual determination must be made as to whether the properly construed claims read on the accused devices. (*Markman*, 52 F.3d at 976.)

"The words of a claim are generally given their ordinary and customary meaning as understood by a person of ordinary skill in the art when read in the context of the specification and prosecution history." (*Thorner v. Sony Computer Entm't Am. LLC*, 669 F.3d 1362, 1365–67 (Fed. Cir. 2012) (citing *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005) (*en banc*)).) In construing claims, the ALJ should first look to intrinsic evidence, which consists of the language of the claims, the patent's specification, and the prosecution history, as such evidence "is the most significant source of the legally operative meaning of disputed claim language." (*Vitronics Corp. v. Conceptoronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996); *see also Bell Atl. Network Servs., Inc. v. Covad Comm'n. Group, Inc.*, 262 F.3d 1258, 1267 (Fed. Cir. 2001).) The words of the claims "define the scope of the patented invention." (*Id.*) And, the claims

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themselves “provide substantial guidance as to the meaning of particular claim terms.” (*Phillips*, 415 F.3d at 1314.) It is essential to consider a claim as a whole when construing each term, because the context in which a term is used in a claim “can be highly instructive.” (*Id.*) Claim terms are presumed to be used consistently throughout the patent, such that the usage of the term in one claim can often illuminate the meaning of the same term in other claims. (*Research Plastics, Inc. v. Federal Pkg. Corp.*, 421 F.3d 1290, 1295 (Fed. Cir. 2005).) In addition:

. . . in clarifying the meaning of claim terms, courts are free to use words that do not appear in the claim so long as the resulting claim interpretation . . . accord[s] with the words chosen by the patentee to stake out the boundary of the claimed property.

(*Pause Tech., Inc. v. TIVO, Inc.*, 419 F.3d 1326, 1333 (Fed. Cir. 2005).)

Idiosyncratic language, highly technical terms, or terms coined by the inventor are best understood by reference to the specification. (*Phillips*, 415 F.3d at 1315–16.) While the ALJ construes the claims in light of the specification, limitations discussed in the specification may not be read into the claims. (*See Intervet Inc. v. Merial Ltd.*, 617 F.3d 1282, 1287 (Fed. Cir. 2010); *Abbott Labs. v. Sandoz, Inc.*, 566 F.3d 1282, 1288 (Fed. Cir. 2009).) Some claim terms do not have particular meaning in a field of art, in which case claim construction involves little more than applying the widely accepted meaning of commonly understood words. (*Phillips*, 415 F.3d at 1314.) Under such circumstances, a general purpose dictionary may be of use.¹ (*See Advanced Fiber Tech. (AFT) Trust v. J & L Fiber Servs., Inc.*, 674 F.3d 1365, 1374–75 (Fed. Cir. 2012).)

¹ Use of a dictionary, however, may extend patent protection beyond that to which a patent should properly be afforded. There is also no guarantee that a term is used the same way in a treatise as it would be by a patentee. *Phillips*, 415 F.3d at 1322.

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Claim terms should generally be given their ordinary and customary meaning except “1) when a patentee sets out a definition and acts as his own lexicographer, or 2) when the patentee disavows the full scope of a claim term either in the specification or during prosecution.” (*Thorner*, 669 F.3d at 1365.) “To act as its own lexicographer, a patentee must ‘clearly set forth a definition of the disputed claim term’” (*Id.*; quoting *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002)).) And “[w]here the specification makes clear that the invention does not include a particular feature, that feature is deemed to be outside . . . the patent,” even if the terms might otherwise be broad enough to cover that feature. (*Id.* at 1366 (internal citation omitted).) Thus, if a claim term is defined contrary to the meaning given to it by those of ordinary skill in the art, the specification must communicate a deliberate and clear preference for the alternate definition. (*Kumar v. Ovonic Battery Co.*, 351 F.3d 1364, 1368 (Fed. Cir. 2003).) In other words, the intrinsic evidence must “clearly set forth” or “clearly redefine” a claim term so as to put one reasonably skilled in the art on notice that the patentee intended to so redefine the claim term. (*Bell Atl.*, 262 F.3d at 1268.) For example, disclaiming the ordinary meaning of a claim term—and thus, in effect, redefining it—can be affected through “repeated and definitive remarks in the written description.” (*Computer Docking Station Corp. v. Dell, Inc.*, 519 F.3d 1366, 1374 (Fed. Cir. 2008) (citing *Watts v. XL Sys.*, 232 F.3d 877, 882 (Fed. Cir. 2000)); see *SafeTCare Mfg., Inc. v. Tele-Made, Inc.*, 497 F.3d 1262, 1270 (Fed. Cir. 2007) (finding disclaimer of “pulling force” where “the written description repeatedly emphasized that the motor of the patented invention applied a pushing force”).)

When the meaning of a claim term is uncertain, the specification is usually the first and best place to look, aside from the claim itself, in order to find that meaning. (*Phillips*, 415 F.3d at 1315.) The specification of a patent “acts as a dictionary” both “when it expressly defines

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terms used in the claims” and “when it defines terms by implication.” (*Vitronics*, 90 F.3d at 1582.) For example, the specification “may define claim terms by implication such that the meaning may be found in or ascertained by a reading of the patent documents.” (*Phillips*, 415 F.3d at 1323.) “The construction that stays true to the claim language and most naturally aligns with the patent’s description of the invention will be, in the end, the correct construction.” (*Id.* at 1316.) However, as a general rule, particular examples or embodiments discussed in the specification are not to be read into the claims as limitations. (*Markman*, 52 F.3d at 979.)

The prosecution history “provides evidence of how the inventor and the PTO understood the patent.” (*Phillips*, 415 F.3d at 1317; *see also Pass & Seymour, Inc. v. Int’l Trade Comm’n*, 617 F.3d 1319, 1327 (Fed. Cir. 2010) (quoting *Multiform Desiccants, Inc. v. Medzam, Ltd.*, 133 F.3d 1473, 1478 (Fed. Cir. 1998)).) The ALJ may not rely on the prosecution history to construe the meaning of the claim to be narrower than it would otherwise be unless a patentee limited or surrendered claim scope through a clear and unmistakable disavowal. (*Trading Tech. Int’l, Inc. v. eSpeed, Inc.*, 595 F.3d 1340, 1352 (Fed. Cir. 2010) (internal citations omitted); *Vitronics*, 90 F.3d at 1582–83.) For example, the prosecution history may inform the meaning of the claim language by demonstrating how an inventor understood the invention and whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it otherwise would be. (*Vitronics*, 90 F.3d at 1582-83; *see also Chimie v. PPG Indus., Inc.*, 402 F.3d 1371, 1384 (Fed. Cir. 2005) (stating, “The purpose of consulting the prosecution history in construing a claim is to exclude any interpretation that was disclaimed during prosecution.”); *Microsoft Corp. v. Multi-tech Sys., Inc.*, 357 F.3d 1340, 1350 (Fed. Cir. 2004) (stating, “We have held that a statement made by the patentee during prosecution history of a patent in the same family as the patent-in-suit can operate as a disclaimer.”).) The prosecution history includes the

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prior art cited, *Phillips*, 415 F.3d at 1317, as well as any reexamination of the patent. (*Intermatic Inc. v. Lamson & Sessions Co.*, 273 F.3d 1355, 1367 (Fed. Cir. 2001).)

Differences between claims may be helpful in understanding the meaning of claim terms. (*Phillips*, 415 F.3d at 1314.) A claim construction that gives meaning to all the terms of a claim is preferred over one that does not do so. (*Merck & Co. v. Teva Pharms. USA, Inc.*, 395 F.3d 1364, 1372 (Fed. Cir.), *cert. denied*, 546 U.S. 972 (2005); *Alza Corp. v. Mylan Labs. Inc.*, 391 F.3d 1365, 1370 (Fed. Cir. 2004).) In addition, the presence of a specific limitation in a dependent claim raises a presumption that the limitation is not present in the independent claim. *Phillips*, 415 F.3d at 1315. This presumption of claim differentiation is especially strong when the only difference between the independent and dependent claim is the limitation in dispute. (*SunRace Roots Enter. Co., v. SRAM Corp.*, 336 F.3d 1298, 1303 (Fed. Cir. 2003).) “[C]laim differentiation takes on relevance in the context of a claim construction that would render additional, or different, language in another independent claim superfluous.” (*AllVoice Computing PLC v. Nuance Commc’ns, Inc.*, 504 F.3d 1236, 1247 (Fed. Cir. 2007).)

Finally, when the intrinsic evidence does not establish the meaning of a claim, the ALJ may consider extrinsic evidence, *i.e.*, all evidence external to the patent and the prosecution history, including inventor testimony, expert testimony and learned treatises. (*Phillips*, 415 F.3d at 1317.) Extrinsic evidence may be helpful in explaining scientific principles, the meaning of technical terms, and terms of art. (*Vitronics*, 90 F.3d at 1583; *Markman*, 52 F.3d at 980.) However, the Federal Circuit has generally viewed extrinsic evidence as less reliable than the patent itself and its prosecution history in determining how to define claim terms. (*Phillips*, 415 F.3d at 1318.) With respect to expert witnesses, any testimony that is clearly at odds with the

claim construction mandated by the claims themselves, the patent specification, and the prosecution history should be discounted. (*Id.* at 1318.)

If the meaning of a claim term remains ambiguous after a review of the intrinsic and extrinsic evidence, then the patent claims should be construed so as to maintain their validity. (*Id.* at 1327.) However, if the only reasonable interpretation renders a claim invalid, then the claim should be found invalid. (*See Rhine v. Casio, Inc.*, 183 F.3d 1342, 1345 (Fed. Cir. 1999).)

B. '455 Patent

RealD asserts claims 1-3, 9-11, 13-15, 17-19, and 21 of the '455 patent. (CIB at 8-39.)

1. Level of Skill in the Art

RealD proposes that a person of ordinary skill in the art ("POSITA") for the Asserted Patents, which were filed in 2006, is "a person with a bachelor's degree in physics, mechanical engineering, or electrical engineering, and with a couple years of work experience in designing optical systems." (CIB at 5.)

MasterImage contends that a POSITA "would be someone with a good working knowledge of optics and display systems in general, and stereoscopic projection systems in particular." (RIB at 7.) Additionally, MasterImage submits that a POSITA would have gained this knowledge through an undergraduate or graduate education in physics, optics, or a comparable field, such as mechanical engineering, electrical engineering and other engineering or scientific degrees, in combination with further training and several years of practical working experience. (*Id.*)

The ALJ points out that both parties put forth a similar definition for a POSITA. (*See* CIB at 5; *see also* RIB at 7.) As such, the ALJ finds that a POSITA is defined as a person with a bachelor's degree in physics, optics, mechanical engineering, or electrical engineering, and with

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at least two years of work experience in optics, optical design or optical systems. (See Corrected CX-0667C (Hesselink Witness Statement) at Q/A 54 on p. 26; see also Third Corrected RX-0588C (Brennesholtz Witness Statement) at Q/A 400 and Corrected RX-0590C (Kessler Witness Statement) at Q/A 45.)

2. Claim Construction

Three terms are in dispute in this Investigation with respect to the '455 patent. (See CIB at 7-17; RIB at 8-34.)

Table 1 lists the parties' proposed claim construction for each disputed term. (See CIB at 7-17; RIB at 8-34.)

'455 Claim Term	RealD	MasterImage
Preamble: "An apparatus for projecting stereoscopic images, comprising"	The preamble is not a limitation.	Preamble is a limitation and it has its plain and ordinary meaning, which requires a projector for generating left-perspective and right-perspective images.
"split the image light energy received" / "split the image received"	Plain and ordinary meaning.	"separate the image light energy into two equal paths (parts) that carry the same entire image received and have polarization states that are substantially orthogonal to each other"
"uniformly modulate"	"operating on substantially all input light to substantially change it from one polarization state to another polarization state"	Indefinite; or "any transformation in polarization state resulting from polarization modulation is applied equally to all portions of the incoming light"

3. Preamble: “An apparatus for projecting stereoscopic images, comprising” (All Asserted Claims)

RealD	MasterImage
The preamble is not a limitation.	Preamble is a limitation and it has its plain and ordinary meaning, which requires a projector for generating left-perspective and right-perspective images.

RealD contends that the preamble should not be construed as a limitation. (CIB at 8.) RealD argues that the claims themselves demonstrate that the invention does not include a projector as the limitations in claims 1 and 17 sufficiently describe a structurally complete invention. (*Id.*) RealD points out that “[c]laim 1 recites a polarizing splitting element, a reflector, and a first polarization modulator, and claim 17 recites a splitter, a reflector, and a polarization modulator arrangement.” (*Id.*) Specifically, RealD submits that the elements in claims 1 and 17 are “fully sufficient to describe a structurally complete invention that receives 2D images and projects 3D stereoscopic images; thus, the preamble is not a limitation and is of no significance to claim construction.” (*Id.*) Additionally, RealD submits that the specification clarifies that a projector is separate from the invention as the specification states that image light originating from the projector is eventually projected through a polarization modulator (or modulators) 304 and 307 and then onto a projection screen. (*Id.* at 9.)

MasterImage asserts that the preamble is a limitation and should be construed because the preamble provides meaning as to what is actually described and claimed in the patent, namely a stereoscopic projection system. (RIB at 8.) First, MasterImage contends that the subject matter of the ’455 patent is a stereoscopic projection system. (*Id.* at 9.) Additionally, MasterImage argues that the ’455 patent refers to a projection system that includes an imaging surface 301

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inside the projector and the projection lens 302. (*Id.*) MasterImage also argues that in order for the apparatus in the body of the claim to project stereoscopic images, the apparatus must first be connected to a projector and that projector must be displaying stereoscopic images and, therefore, the preamble is necessary to give meaning to that which is recited in the body of the claim. (*Id.* at 10.) MasterImage points out that reference to “projecting stereoscopic images” in the preambles of claims 1 and 17 of the ’455 patent is necessary to give life, meaning, and vitality to each claim because of the recital of the phrase “stereoscopic images” in each preamble that a POSITA would understand that the “image light energy”/“image” received is a series of alternating left-perspective and right-perspective images and that the polarizing splitting element must be configured to split the “image light energy” in a way that allows for creation of a stereoscopic image. (*Id.* at 10-11.)

The ALJ finds that the preamble is not a limitation. First, and most importantly, the language in the body of the claim defines a structurally complete invention and the preamble is only used to state a purpose or intended use for the invention. (’455 patent at 12:22-35; *see Rowe v. Dror*, 112 F.3d 473, 478 (Fed. Cir. 1997); *see also, Am. Med. Sys. v. Biolitec, Inc.* 618 F.3d 1354, 1358-59 (Fed. Cir. 2010).) Furthermore, the ALJ finds that the preamble is not necessary to give life, meaning, and vitality to the claim as the body of the claim defines a structurally complete invention and, therefore, the preamble should not be construed as a limitation. (*See Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1305 (Fed. Cir. 1999).)

The ALJ finds MasterImage’s arguments that the preamble is a limitation to be unpersuasive and incorrect. First, MasterImage’s contention that the preamble provides meaning as to what is actually described and claimed in the patent is contrary to established patent law in

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that the preamble is only used to state a purpose or intended use for the invention, *i.e.*, “an apparatus for projecting stereoscopic images.” (*See Rowe*, 112 F.3d at 478.) Also, the ALJ finds that MasterImage’s next argument, that the subject matter of the ’455 patent is a stereoscopic projection system as recited in the preamble, is incorrect because the “subject matter” only states the purpose for the invention and therefore the preamble is not necessary to give life, meaning, and vitality to the claim. (*See Pitney Bowes, Inc.*, 182 F.3d at 1305.) MasterImage’s third argument merely states that the preamble is necessary to give life, meaning, and vitality to each claim; as such, the ALJ finds that MasterImage does not provide any basis for this argument and does not explain why the body of claims 1 and 17 does not define a structurally complete invention and thereby requires the preamble. (*See Am. Med. Sys.*, 618 F.3d at 1358-59.)

Therefore, the ALJ finds that the preamble is not a limitation.

4. “split the image light energy received” / “split the image received” (All Asserted Claims)

RealD	MasterImage
Plain and ordinary meaning.	“separate the image light energy into two equal paths (parts) that carry the same entire image received and have polarization states that are substantially orthogonal to each other”

RealD contends that the claims support its construction. Claims 1 and 17 are drafted in open language (*i.e.*, comprising) and each refers to “a polarizing splitting element configured to receive image light energy and split the image light energy received” and, therefore, no legal basis exists for limiting the claims to an apparatus that splits the image light into two equal paths only, let alone requiring that each carry the same entire image as asserted by MasterImage. (CIB at 10.) Next, RealD submits that the Abstract of the ’455 patent supports its construction

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because the Abstract states “[a] multiple path stereoscopic project system is disclosed.” (*Id.* at 11.) RealD also contends that the specification does not disclose, let alone require, separation of the image light energy into “two equal paths” or that each “carry the same entire image.” (*Id.*) There was no such clear expression of intent to redefine “split” to “two equal paths that carry the same entire image.” (*Id.*)

MasterImage contends that the terms “split the image light energy received” in claim 1 and “split the image received” in claim 17 of the ’455 patent, should be construed to mean “separate the image light energy/image/first image light energy/second image light energy received into two equal paths (parts) that carry the same entire image received and have polarization states that are substantially orthogonal to each other.” (RIB at 12.) MasterImage points out that in each of the ’455 patent embodiments, the patent speaks only of splitting the image light received by the polarizing beamsplitter, or splitter, into two equal paths that carry the same entire image received and have polarization states that are substantially orthogonal to each other. (*Id.* at 13.) Additionally, MasterImage contends that the default and conventional method of polarization splitting, in and through to the present day, is for the unpolarized image light, from the full image, to be split into two light paths, one for each state of polarization. (*Id.* at 16.) Furthermore, MasterImage argues that the language of claims 1 and 17 of the ’455 patent each recite splitting the image received into two paths and only two paths, namely, a “primary path” and a “secondary path.” (*Id.* at 19.)

The ALJ finds that the claim term “split the image light energy received” / “split the image received” should be given its plain and ordinary meaning. The Federal Circuit “has repeatedly emphasized that an indefinite article “a” or “an” in patent parlance carries the meaning of “one or more” in open-ended claims containing the transitional phrase “comprising.”

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KCJ Corp. v. Kinetic Concepts, Inc., 223 F.3d 1351, 1356 (Fed. Cir. 2000); *see also Elkay Mfg. Co. v. Ebco Mfg. Co.*, 192 F.3d 973, 977 (Fed. Cir. 1999). Claims 1 and 17 use the transitional, open-ended term of “comprising” and each claim includes the language “a polarizing splitting element configured to receive image light energy and split the image light energy received . . .” . Therefore, the ALJ finds that there is no legal basis for limiting the claims to only one element (*i.e.*, one polarizing splitting element in the ’455 patent) that would limit the claimed invention to only one “split” into two, and only two, paths of light. In other words, the claim language use of the transitional phrase “comprising” results in the invention including one or more polarizing splitting elements and, consequently, not limiting the invention to only two light paths. Accordingly, the ALJ finds this claim term in the context of the overall claim language takes on its plain and ordinary meaning.

The ALJ finds MasterImage’s arguments pertaining to the construction of the term “split the image light energy received” / “split the image received” are unpersuasive. First, MasterImage’s proposed claim construction does not properly consider the use and the meaning of the transitional phrase “comprising” in view of one or more polarizing splitting elements. The ALJ finds that MasterImage’s lack of proper consideration of the use of the term comprising within its argument is enough on its own to cause MasterImage’s argument to fail. (*See KCJ Corp.*, 223 F.3d at 1356.)

Further, the ALJ finds that MasterImage incorrectly attempts to read limitations into its proposed construction such as “carrying the same entire image received.” However, the specification never expressly discloses or teaches that each path must carry the same entire image. The ALJ also finds MasterImage’s argument that the embodiments in the ’455 patent specification support its construction is incorrect because limitations discussed in the

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specification may not be read into the claims. (See *Intervet Inc. v. Merial Ltd.*, 617 F.3d 1282, 1287 (Fed. Cir. 2010); *Abbott Labs. v. Sandoz, Inc.*, 566 F.3d 1282, 1288 (Fed. Cir. 2009).) Next, the ALJ finds MasterImage’s “default and conventional meaning” argument to be confusing and unclear, and thereby not persuasive because MasterImage provides no legal basis to consider a “default and conventional” meaning of a term or phrase within a patent claim. Additionally, MasterImage’s argument that the patentees could have used the phrase “two or more” paths or “at least two” paths in the specification and claims is also unpersuasive because what the patentees could have done has no bearing on and is irrelevant to what they actually did use, which is the term “comprising” in conjunction with claiming “a polarizing splitting element.”

Therefore, the ALJ finds that the claim terms should be given their plain and ordinary meaning and that the splitting is not limited to two, and only two, light paths that carry the same image.

5. “uniformly modulate” (All Asserted Claims)

RealD	MasterImage
“operating on substantially all input light to substantially change it from one polarization state to another polarization state”	Indefinite; or “any transformation in polarization state resulting from polarization modulation is applied equally to all portions of the incoming light”

First, RealD points out that the patentees amended the claims to add “uniformly” in front of “modulate” during prosecution and the claim amendment and accompanying statements make plain what the patentees intended by “uniformly modulate.” (CIB at 13.) RealD argues that, in response to the USPTO rejection of independent claims 1 and 17 by reference to the U.S. Patent No. 6,280,034 to Brennesholtz (“*Brennesholtz '034*”; RX-0125) pixelated LCD light modulator (86), the patentees added the term “uniformly” and provided an accompanying explanation. (*Id.*)

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Furthermore, RealD contends that in amending the claims, the inventors stated that uniform modulation is used to switch polarization states on the image (both paths) to separate by polarization the left and right eye images. (*Id.* at 14.) Additionally, RealD submits that the patentees clarified that “uniformly modulate” is distinct from “the modulation of the ‘pixel light pattern’ of Brennesholtz that is not uniform, because it is a pixelated LCD modulator panel.” (*Id.*) RealD argues that the patentees distinguished their modulator, which changes the polarization state of substantially all the incident image light, from the Brennesholtz ’034’s pixelated modulator that “only act[s] on portions of the light” and leaves other portions “unchanged.” (*Id.*) In other words, RealD points out that the patentees used “uniformly modulate” to emphasize the fact that their modulator acts on substantially all input light to substantially change it from one polarization state to another polarization state and nothing more. (*Id.*)

RealD contends that MasterImage has failed to demonstrate by clear and convincing evidence that “uniformly modulate” is indefinite because the prosecution history is consistent and informs, with reasonable certainty, the scope of this claim term to a POSITA. (*Id.* at 16.) RealD also contends that MasterImage’s assertions that “uniformly modulate” is indefinite in part because RealD allegedly provided “numerous” and “varied” claim constructions are unfounded and should be disregarded because RealD points out that it has consistently set forth the aforementioned construction throughout this Investigation. (*Id.* at 16.)

MasterImage argues that the term “uniformly modulate” is indefinite for at least the following reasons: (1) the term “uniformly modulate” is not used in the ’455 specification and has no accepted or “plain and ordinary” meaning in the fields of cinema displays generally, and polarization modulation, specifically; (2) the term uniformly modulate was added by RealD

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during prosecution to overcome a prior art rejection based on Brennesholtz '034; and (3) RealD accompanied the amendment to the claims with statements as to reasons why the modulators in Brennesholtz '034 do not “uniformly modulate,” and instead “selectively modulate and reflect portions of the light” received and constitute a “pixelated LCD modulator” that is “operative to modulate the pixel light pattern.” (RIB at 125.)

MasterImage proposes that, if the term “uniformly modulate” is assumed to be definite and requiring construction, the term should be construed to mean that “any transformation in polarization state resulting from polarization modulation is applied equally to all portions of the incoming light.” (RIB at 25.) MasterImage contends that its proposed construction focuses on the fact that the adverb “uniformly” modifies the verb “modulate” and is consistent with the prosecution history wherein RealD distinguished over a prior art patent which does not “equally” (*i.e.*, uniformly) modulate the light received and instead “selectively” (on a pixel segment by pixel segment basis) modulates the light received. (*Id.* at 25.)

First, the ALJ finds the term “uniformly modulate” is not indefinite because MasterImage did not meet its clear and convincing burden as the prosecution history informs a POSITA with reasonable certainty with the scope and meaning of the claim term “uniformly modulate.”

The ALJ finds that the claim term “uniformly modulate” means operating on substantially all input light to substantially change it from one polarization state to another polarization state. The record shows the prosecution history provides a thorough explanation of the meaning of the term “uniformly modulate.” (*See* JX-0005 at REALD_ITC0000200-11.) Specifically, the prosecution history explains that “uniform modulation” is, thus, used to switch polarization states on the image (both paths) to separate by polarization the left and right eye

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images.” (*Id.* at REALD_ITC0000202 (FN2: “as opposed to the modulation of the ‘pixel light pattern’ of Brennesholtz that is not uniform, because it is a pixelated LCD modulator panel.”).)

First, the ALJ notes that MasterImage admits that the prosecution history of the ’455 patent is important to understand the meaning of the term “uniformly modulate.” (*See* RIB at 27.) MasterImage states “[t]o appreciate the arguments made by RealD to distinguish over Brennesholtz, and thus to seek an understanding of the meaning of the term ‘uniformly modulate,’ it is necessary to understand what Brennesholtz actually describes.” (*Id.*) Then, MasterImage spends approximately 4 pages (*see* RIB 27 to 32) explaining the details of the technology behind Brennesholtz ’034 and then states that “uniformly modulate” should be construed to mean that “any transformation in polarization state resulting from polarization modulation is applied equally to all portions of the incoming light.” (*Id.* at 32.) However, the ALJ finds that while MasterImage stated the importance of the ’455 prosecution history including the amendment to add the term “uniformly” to claims 1 and 17, MasterImage simply ignored the pertinent parts of the prosecution history whereby the patentee explains the meaning of the term “uniformly modulate.” (*See* JX-0005 at REALD_ITC0000202.) Specifically, MasterImage simply ignores the following pertinent language in the prosecution history: “uniform modulation is, thus, used to switch polarization states on the image (both paths) to separate by polarization the left and right eye images.” (*Id.* at REALD_ITC0000202 (FN2: “as opposed to the modulation of the ‘pixel light pattern’ of *Brennesholtz* that is not uniform, because it is a pixelated LCD modulator panel.”).) By ignoring this explanation, the ALJ finds MasterImage’s proposed construction is incorrect.

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Therefore, the ALJ finds that the claim term “uniformly modulate” means “operating on substantially all input light to substantially change it from one polarization state to another polarization state.”

C. '296 Patent

RealD asserts claims 1, 2, 7, 8, 11, and 12 of the '296 patent. (CIB at 97-98.)

1. Level of Skill in the Art

The ALJ finds a POSITA for the '296 patent is the same as the POSITA for the '455 patent. Accordingly, as set forth *supra* in Section IV.B.1, a POSITA for the '296 patent is a person with a bachelor’s degree in physics, optics, mechanical engineering, or electrical engineering, and with at least two years of work experience in optics, optical design or optical systems.

2. Claim Construction

Two terms are in dispute in this investigation with respect to the '296 patent. (See CIB at 97-98; RIB at 8-20.)

Table 2 lists the parties’ proposed claim construction for each disputed term. (See CIB at 97-98; RIB at 8-20.)

'296 Claim Term	RealD	MasterImage
“Apparatus for projecting stereoscopic images, comprising:”	The preamble is not a limitation.	Preamble is a limitation and it has its plain and ordinary meaning, which requires a projector for generating left-perspective and right-perspective images.

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'296 Claim Term	RealD	MasterImage
"split the first image light energy received" / "split the second image light energy received"	Plain and ordinary meaning.	Separate the [image light energy] [image] [first image light energy] [second image light energy] received into two equal parts that carry the same entire image received and have polarization states that are substantially orthogonal to each other

3. "Apparatus for projecting stereoscopic images, comprising:"

RealD	MasterImage
The preamble is not a limitation.	Preamble is a limitation and it has its plain and ordinary meaning, which requires a projector for generating left-perspective and right-perspective images.

For the same reasons as set forth *supra* in Section IV.B.3, the ALJ finds that the preamble is not a limitation.

4. "split the first image light energy received" / "split the second image light energy received"

RealD	MasterImage
Plain and ordinary meaning.	Separate the [image light energy] [image] [first image light energy] [second image light energy] received into two equal parts that carry the same entire image received and have polarization states that are substantially orthogonal to each other

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As set forth *supra* in Section IV.B.4, the ALJ finds that the term “split the image light energy received” / “split the image received” should be given its plain and ordinary meaning.

D. '934 Patent

Two terms are in dispute in this investigation with respect to the '934 patent. (*See* CIB at 111-116; RIB at 8-11, 21-23.)

1. Level of Skill in the Art

The ALJ finds a POSITA for the '934 patent is the same as the POSITA for the '455 and '296 patents. Accordingly, as set forth *supra* in Section IV.B.1, a POSITA for the '934 patent is a person with a bachelor's degree in physics, optics, mechanical engineering, or electrical engineering, and with at least two years of work experience in optics, optical design or optical systems.

2. Claim Construction

The parties' proposed claim construction for each disputed term is as follows: (*See* CIB at 111-116; RIB at 8-11, 21-23.)

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'934 Claim Term	RealD	MasterImage
"A stereoscopic system comprising:"	The preamble is not a limitation.	Preamble is a limitation and it has its plain and ordinary meaning, which requires a projector for generating left-perspective and right-perspective images.
"direct first light bundles having a first state of polarization (SOP) along a first light path, and direct second light bundles having a second SOP along a second light path"	Plain and ordinary meaning.	"separate the light received into two light bundles that carry the same entire image received, the first light bundles having a first state of polarization (SOP) and the second light bundles having a second SOP substantially orthogonal to the first SOP, and direct the first light bundles along a first light path, and direct the second light bundles along a second light path."

3. "A stereoscopic system comprising:"

RealD	MasterImage
The preamble is not a limitation.	Preamble is a limitation and it has its plain and ordinary meaning, which requires a projector for generating left-perspective and right-perspective images.

MasterImage argues that the preamble should be limiting for the same reasons set forth *supra* with respect to the '455 and the '296 patents. (RIB at 8-11.) However, for the reasons set forth *supra* in Section IV.B.3, the ALJ finds that the preamble for the '934 patent ("[a] stereoscopic system comprising") is not limiting.

4. "direct first light bundles having a first state of polarization (SOP) along a first light path, and

direct second light bundles having a second SOP along a second light path”

RealD	MasterImage
Plain and ordinary meaning.	separate the light received into two light bundles that carry the same entire image received, the first light bundles having a first state of polarization (SOP) and the second light bundles having a second SOP substantially orthogonal to the first SOP, and direct the first light bundles along a first light path, and direct the second light bundles along a second light path.

RealD argues that the claim term should be given its plain and ordinary meaning. (CIB at 114.) Specifically, RealD argues that “direct” should be construed using its plain and ordinary meaning and that it has no special meaning in the field of art. (*Id.*) Moreover, RealD argues that the claim language supports its interpretation as it is drafted using open language, *i.e.* comprising, and that there is no legal basis for requiring the limitations that MasterImage imposes. (CIB at 114-115.) Furthermore, RealD argues that the specification describes embodiments that have multiple bundles and are not limited to just two bundles further providing support that the claim language should not be limited to two bundles as proposed by MasterImage. (CIB at 115.) RealD asserts that MasterImage improperly relies on extrinsic evidence, especially in describing a “default and conventional” meaning for the claim term “direct.” (CIB at 115-116.)

MasterImage argues that the claim term should be construed to mean “separate the light received into two light bundles that carry the same entire image received, the first light bundles having a first state of polarization (SOP) and the second light bundles have a second SOP substantially orthogonal to the first SOP, and direct the first light bundles along a first light path, and direct the second light bundles along a second light path.” (RIB at 21.) MasterImage argues that the specification supports its construction because in every embodiment “there is a

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polarizing beamsplitter that separates the image received from a conventional projector into a single first path of one polarization state, and a single second path of an orthogonal polarization state.” (RIB at 21-22.) The specification further discloses that each path carries the same image received and differs only in the polarization state of light. (*Id.*)

MasterImage further asserts that the “default and conventional” meaning supports its construction of this claim term. (RIB at 22-23.) Specifically, MasterImage argues that the default and conventional meaning of polarization splitting means that the unpolarized image light be split into two light paths, one for each state of polarization. (*Id.*)

The ALJ finds that “direct first light bundles having a first state of polarization (SOP) along a first light path, and direct second light bundles having a second SOP along a second light path” should be given its plain and ordinary meaning. The ALJ finds that the claim language is clear and that no further construction is necessary. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1314 (Fed. Cir. 2005) (“We have made clear, moreover, that the ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, *i.e.*, as of the effective filing date of the patent application.”) Indeed, MasterImage’s own use of the claim terms in their own proposed construction (“separate the light received into two light bundles that carry the same entire image received, the first light bundles having a first state of polarization (SOP) and the second light bundles have a second SOP substantially orthogonal to the first SOP, and **direct the first light bundles along a first light path, and direct the second light bundles along a second light path**”) (emphasis added) indicates that the claim language can be understood without any further construction.

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The ALJ finds, however, that the additional limitations proposed by MasterImage, *i.e.*, that the light bundle (a) be split into only 2 light bundles and (b) that those 2 light bundles carry the same image, are not supported by the claim language, specification or the extrinsic evidence. As for the splitting into 2 light bundles requirement, MasterImage argues that this requirement stems from (1) the claims themselves (“The claims of the ’934 patent clearly refer to splitting into two paths.”) and (2) the “default and conventional” meaning of polarization splitting (“This default and convention [sic] meaning for polarization splitting is consistent with MasterImage’s proposed construction [...] [and] is precisely what is described in the ’934 patent and recited claims thereof.”). (RIB at 21-22.) The ALJ finds little support for MasterImage’s proposed interpretation aside from the conclusory language it sets forth in its arguments. First, while the language of the claims describes a first and second light bundle, the ALJ agrees with RealD that the claims’ use of “comprising” indicates that the elements recited therein are what are required at a minimum and are not limiting. *CIAS, Inc. v. Alliance Gaming Corp.*, 504 F.3d, 1356, 1360 (Fed. Cir. 2007) (“In the patent claim context the term “comprising” is well understood to mean “including but not limited to.”); *see also Lucent Technologies, Inc. v. Gateway, Inc.*, 525 F.3d 1200, 1214 (Fed.Cir.2008) (“This court has consistently interpreted “including” and “comprising” to have the same meaning, namely, that the listed elements (*i.e.*, method steps) are essential but other elements may be added.”) (citations omitted); *Vivid Technologies, Inc. v. American Science & Engineering, Inc.*, 200 F.3d 795, 811 (Fed. Cir. 1999) (“Further, claims 5 and 8 use the signal “comprising,” which is generally understood to signify that the claims do not exclude the presence in the accused apparatus or method of factors in addition to those explicitly recited.”). Thus, according to the plain language of the claims, it is not limited to a single PBS or to only two light paths.

Indeed, the specification describes embodiments with more than two bundles. For example, Figure 2A (see below) shows bundles A, B and C:

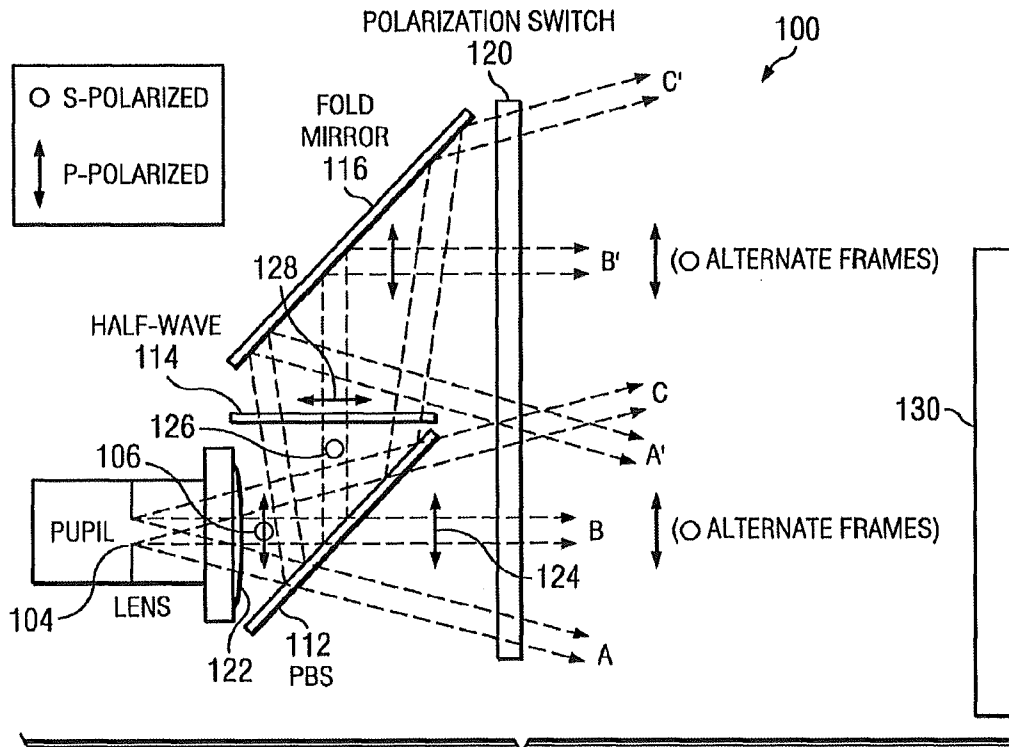


FIG. 2A

(’934 Patent at Fig. 2A; 3:21-29; see also Figure 3 and 5:9-21.) MasterImage argues that the specification discloses three different light bundles for each state of polarization, namely s-polarized and p-polarized states. (RRB at 11.) The ALJ finds that even this disclosure fails to support limiting the claims to only two light paths since limiting the claims to the preferred embodiment is generally improper. *Phillips*, 415 F.3d at 1323 (“For instance, although the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments.”). Indeed, given the open language of the claims, the ALJ finds that this is not one of those instances where limiting the claims to the preferred embodiments is proper.

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As for MasterImage's "default and conventional" meaning argument, the ALJ finds that this argument similarly fails to require that the claim is limited to only two light bundles. First, it is unclear what, exactly, is meant by "default and conventional" meaning or what, if any role, that meaning has in claim construction. MasterImage fails to cite any case law that discusses "default and conventional" meanings or how it should be used in claim construction. (*See* RIB at 22-23.) At best, it appears to be extrinsic evidence, *i.e.*, the definition used by its expert Dr. Kessler. (RIB at 22-23; RX-0590C at Q&A 265-266.) However, Dr. Kessler cites no support for his testimony – he simply makes the conclusory statement that it is the "default and conventional" meaning.² (RX-0590C at Q&A 265-66.) Such conclusory statements, without more, are insufficient to support adding this additional limitation to the claim term. Therefore, the ALJ declines to limit the claim term to 2 light bundles.

Regarding the "same image" limitation, MasterImage supports this argument by simply citing the entire patent and stating "[e]ach path carries the same image received and differs only in the polarization state of light." (*See* RIB at 22 (citing back to JX-0004).) The ALJ finds, again, such conclusory statements unpersuasive. MasterImage cites to nothing in the claim language or specification that supports adding the "same image" limitation. Consequently, the ALJ declines to adopt such a limitation.

The ALJ finds that "direct first light bundles having a first state of polarization (SOP) along a first light path, and direct second light bundles having a second SOP along a second light path" should be given its plain and ordinary meaning.

² Dr. Kessler asserts that this is supported by the patent. However, as set forth *supra*, the patent does not describe only two light bundles, but instead discloses embodiments that have more than 2 light bundles.

V. INFRINGEMENT DETERMINATION

A. Applicable Law

In a Section 337 investigation, the complainant bears the burden of proving infringement of the asserted patent claims by a preponderance of the evidence. *Certain Flooring Products*, Inv. No. 337-TA-443, Commission Notice of Final Determination of No Violation of Section 337, 2002 WL 448690 at 59, (March 22, 2002); *Enercon GmbH v. Int'l Trade Comm'n*, 151 F.3d 1376 (Fed. Cir. 1998).

Each patent claim element or limitation is considered material and essential. *London v. Carson Pirie Scott & Co.*, 946 F.2d 1534, 1538 (Fed. Cir. 1991). Literal infringement of a claim occurs when every limitation recited in the claim appears in the accused device, *i.e.*, when the properly construed claim reads on the accused device exactly. *Amhil Enters., Ltd. v. Wawa, Inc.*, 81 F.3d 1554, 1562 (Fed. Cir. 1996); *Southwall Tech. v. Cardinal IG Co.*, 54 F.3d 1570, 1575 (Fed Cir. 1995).

If the accused product does not literally infringe the patent claim, infringement might be found under the doctrine of equivalents. The Supreme Court has described the essential inquiry of the doctrine of equivalents analysis in terms of whether the accused product or process contains elements identical or equivalent to each claimed element of the patented invention. *Warner-Jenkinson Co., Inc. v. Hilton Davis Chemical Co.*, 520 U.S. 17, 40 (1997).

Under the doctrine of equivalents, infringement may be found if the accused product or process performs substantially the same function in substantially the same way to obtain substantially the same result. *Valmont Indus., Inc. v. Reinke Mfg. Co.*, 983 F.2d 1039, 1043 (Fed. Cir. 1993). The doctrine of equivalents does not allow claim limitations to be ignored. Evidence must be presented on a limitation-by-limitation basis, and not for the invention as a whole.

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Warner-Jenkinson, 520 U.S. at 29; *Hughes Aircraft Co. v. U.S.*, 86 F.3d 1566 (Fed. Cir. 1996). Thus, if an element is missing or not satisfied, infringement cannot be found under the doctrine of equivalents as a matter of law. *See, e.g., Wright Medical*, 122 F.3d 1440, 1444 (Fed. Cir. 1997); *Dolly, Inc. v. Spalding & Evenflo Cos., Inc.*, 16 F.3d 394, 398 (Fed. Cir. 1994); *London v. Carson Pirie Scott & Co.*, 946 F.2d 1534, 1538-39 (Fed. Cir. 1991); *Becton Dickinson and Co. v. C.R. Bard, Inc.*, 922 F.2d 792, 798 (Fed. Cir. 1990).

The concept of equivalency cannot embrace a structure that is specifically excluded from the scope of the claims. *Athletic Alternatives v. Prince Mfg., Inc.*, 73 F.3d 1573, 1581 (Fed. Cir. 1996). In applying the doctrine of equivalents, the Commission must be informed by the fundamental principle that a patent's claims define the limits of its protection. *See Charles Greiner & Co. v. Mari-Med. Mfg., Inc.*, 92 F.2d 1031, 1036 (Fed. Cir. 1992). As the Supreme Court has affirmed:

Each element contained in a patent claim is deemed material to defining the scope of the patented invention, and thus the doctrine of equivalents must be applied to individual elements of the claim, not to the invention as a whole. It is important to ensure that the application of the doctrine, even as to an individual element, is not allowed such broad play as to effectively eliminate that element in its entirety.

Warner-Jenkinson, 520 U.S. at 29.

To prove direct infringement, RealD must prove by a preponderance of the evidence that each of the accused products either literally infringe or infringe under the doctrine of equivalents the asserted claims of the asserted patents. *Advanced Cardiovascular Sys., Inc. v. Scimed Life Sys., Inc.*, 261 F.3d 1329, 1336 (Fed. Cir. 2001).

A party can also indirectly infringe a patent. To prevail on a claim for indirect infringement, a patentee must first demonstrate direct infringement, and then establish that the “defendant possessed the requisite knowledge or intent to be held vicariously liable.” *Dynacore*

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Holdings Corp. v. U.S. Philips Corp., 363 F.3d 1263, 1272–73 (Fed. Cir. 2004). The knowledge requirement must be met by a showing of either actual knowledge or willful blindness. *Global-Tech Appliances, Inc. v. SEB S.A.*, 131 S. Ct. 2060, 2068 (2011).

Under 35 U.S.C. § 271(b), “[w]hoever actively induces infringement of a patent shall be liable as an infringer.” “To prove induced infringement, the patentee must show direct infringement, and that the alleged infringer knowingly induced infringement and possessed specific intent to encourage another's infringement.” *Toshiba Corp. v. Imation Corp.*, 681 F.3d 1358, 1363 (Fed. Cir. 2012) (internal quotations omitted).

The Supreme Court has held that “induced infringement under § 271(b) requires knowledge that the induced acts constitute patent infringement.” *Global-Tech*, 131 S. Ct. at 2070. In so holding, the Supreme Court rejected the Federal Circuit's “deliberate indifference” to a “known risk” test. *Id.* at 2071. It explained that the “knowledge” required under § 271(b) could be satisfied by a showing of actual knowledge or “willful blindness.” *Id.* at 2068–71. The Supreme Court explained that a defendant acts with willful blindness if she “subjectively believe[s] that there is a high probability that a fact exists” and “take[s] deliberate actions to avoid learning of the fact.” *Id.* at 2070, 2070 n.9. In contrast, a defendant who “merely knows of a substantial and unjustified risk of [] wrongdoing” acts recklessly, and a defendant who “should have known of a similar risk, but in fact, did not” acts negligently. *Id.* at 2071. “Inducement requires evidence of culpable conduct, directed to encouraging another's infringement, not merely that the inducer had knowledge of the direct infringer's activities.” *DSU Med. Corp. v. JMS Co.*, 471 F.3d 1293, 1306 (Fed. Cir. 2006) (*en banc*).

Under 35 U.S.C. § 271(c), “[w]hoever offers to sell or sells within the United States or imports into the United States a component of a patented machine, manufacture, combination, or

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composition, or a material or apparatus for use in practicing a patented process, constituting a material part of the invention, knowing the same to be specifically made to or specially adapted for use in the infringement of the patent, and not a staple article or commodity suitable for substantial non-infringing use, shall be liable as a contributory infringer.” “Contributory infringement imposes liability on one who embodies in a non-staple device the heart of a patented process and supplies the device to others to complete the process and appropriate the benefit of the patented invention.” *Vita-Mix Corp. v. Basic Holding, Inc.*, 581 F.3d 1317, 1327 (Fed. Cir. 2009). To state a claim for contributory infringement, an infringer must sell, offer to sell or import into the United States a component of an infringing product “knowing [the component] to be especially made or especially adapted for use in an infringement of such patent, and not a staple article or commodity of commerce suitable for substantial non infringing use.” 35 U.S.C. § 271(c); see *Lucent Techs. v. Gateway, Inc.*, 580 F.3d 1301, 1320 (Fed. Cir. 2009). As with induced infringement, a claim for contributory infringement must also contain allegations of the requisite knowledge of the patent-in-suit at the time of infringement. *Global-Tech*, 131 S. Ct. at 2068. In addition, the patentee bears the burden of proving that the accused products have no substantial non-infringing uses. See *Golden Blount, Inc. v. Robert H. Peterson Co.*, 438 F.3d 1354, 1363 (Fed. Cir. 2006).

A seller of a component of an infringing product can also be held liable for contributory infringement if: (1) there is an act of direct infringement by another person; (2) the accused contributory infringer knows its component is included in a combination that is both patented and infringing; and (3) there are no substantial non-infringing uses for the accused component, *i.e.*, the component is not a staple article of commerce. *Carborundum Co. v. Molten Equip. Innovations, Inc.*, 72 F.3d 872, 876 (Fed. Cir. 1995).

B. '455 Patent

1. Claim 1

For the reasons set forth below, the ALJ finds that RealD has proved by a preponderance of the evidence that MasterImage's Horizon 3D, 3D S, [REDACTED] products infringe claim 1 of the '455 patent.

a. "An apparatus for projecting stereoscopic images, comprising:"

Since the ALJ found that the preamble is not a limitation as explained *supra* in IV.B.3, the accused products do not need to be compared to the preamble.

b. "a polarizing splitting element configured to receive image light energy and split the image light energy received into a primary path of light energy transmitted along a primary path and a secondary path of light energy transmitted along a secondary path"

RealD contends that this claim limitation is met by the polarization beam splitter ("PBS") assembly in the accused products. (CIB at 21.) Specifically, RealD argues that in the Horizon 3D S product, the PBS assembly includes [REDACTED]. (*Id.*) Also, RealD submits that in the Horizon 3D, [REDACTED] products, the PBS assembly includes [REDACTED]. (*Id.*) RealD argues that all of the accused products can be seen to have: [REDACTED]

[REDACTED]

[REDACTED]. (*Id.* at 22.) RealD

therefore contends that [REDACTED] of the accused products yield [REDACTED]

[REDACTED]. (*Id.*) As such, RealD alleges that this

claim limitation thus reads on the Horizon 3D, 3D S, [REDACTED] products, whether the

[REDACTED]. (*Id.*)

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MasterImage contends that under its construction for this claim limitation, the “splitting limitation” in the asserted claims of the ’455 patent require that the image light energy (or the image received) be separated into “two equal parts (paths) that carry the same entire image received and have polarization states that are substantially orthogonal to each other.” (RIB at 36; RRB at 15.) As such, MasterImage contends that the Horizon products do not satisfy this limitation, but instead, the Horizon products [REDACTED]. (Id.) Additionally, MasterImage argues that the Horizon three-way polarization splitting technique is distinct from the conventional two-way polarization splitting technique claimed in the ’455 patent. (Id.) Furthermore, MasterImage points out that each polarization beam splitter as claimed in the ’455 patent splits the image light received into two and only two equal paths that carry the same entire image received. (RRB at 11.)

The ALJ finds that the Horizon 3D S product with its [REDACTED] as well as the Horizon 3D, [REDACTED] products with their [REDACTED] meet this claim limitation [REDACTED]

[REDACTED]. (See *KCJ Corp. v. Kinetic Concepts, Inc.*, 223 F.3d 1351, 1356 (Fed. Cir. 2000) (“This court has repeatedly emphasized that an indefinite article “a” or “an” in patent parlance carries the meaning of “one or more” in open-ended claims containing the transitional phrase “comprising.”).)

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The record shows that each of the Horizon products contains [REDACTED]. (See Corr. CX-0667C (Hesselink Witness Statement) at Q/A 63-64 on pp.

30-31.) Specifically, the record shows that [REDACTED] in the Horizon products have [REDACTED]

[REDACTED]

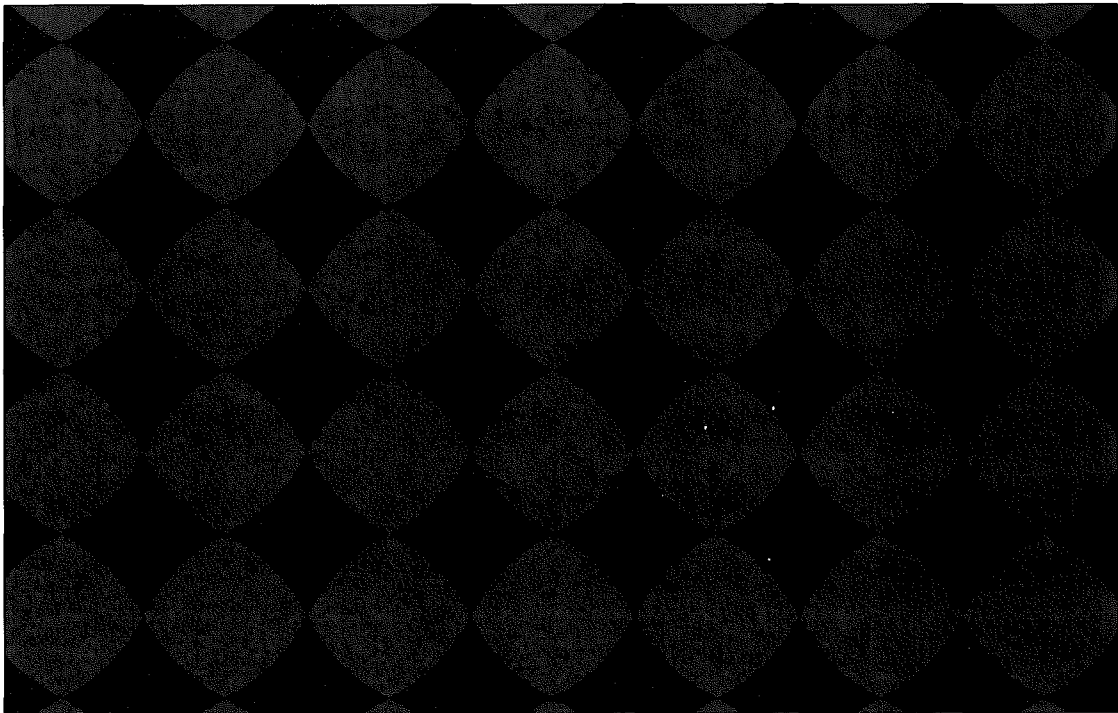
[REDACTED]

[REDACTED]

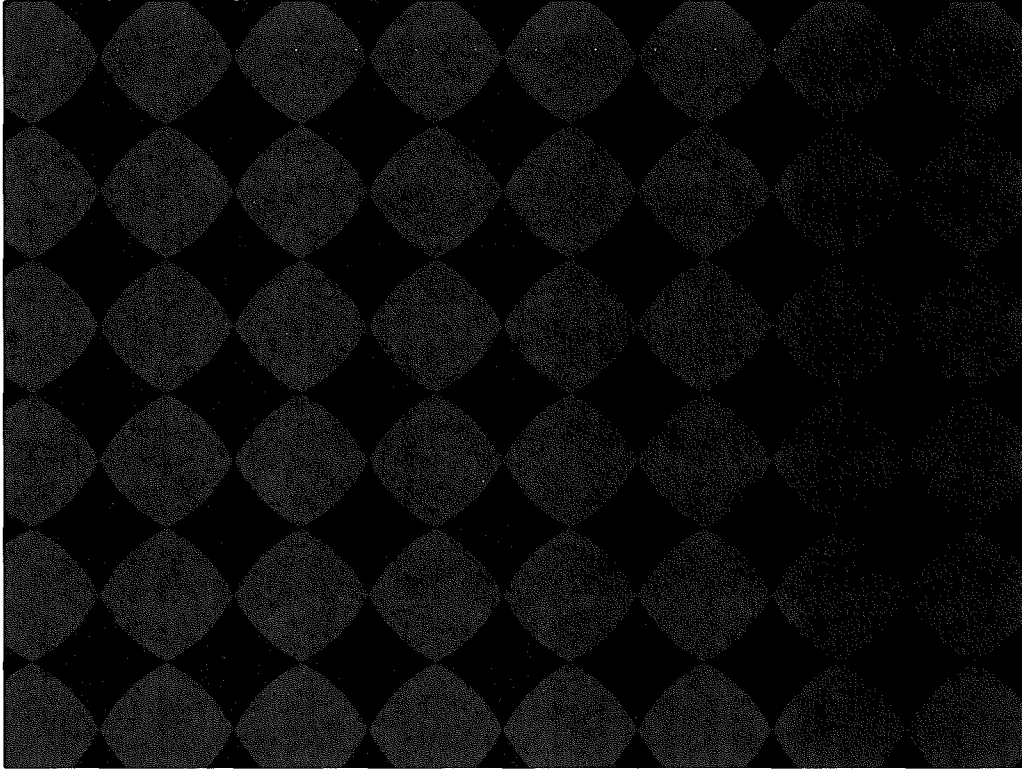
[REDACTED]. (*Id.*; citing to

CDX-0018 at p. 3 (CX-0039C at MI3D_ITC_000010) and at p. 9 (CX-0143C at

MI3D_ITC_938319) as shown below.)



(Horizon 3D and 3D S (and [REDACTED]) (See CX-0039C at MI3D_ITC_000010)).)



(Horizon [REDACTED] (See (CX-0143C at MI3D_ITC_938319)).)

The ALJ finds MasterImage’s non-infringement argument for this claim limitation to be incorrect and unpersuasive. First, MasterImage’s non-infringement argument relies on its proposed incorrect construction for the term “split the image light energy received” / “split the image received” requiring that the PBS splits the image light into only two paths with each path carrying the same entire image. Second, MasterImage attempts to incorrectly limit the PBS to a

[REDACTED] but the record shows the [REDACTED]

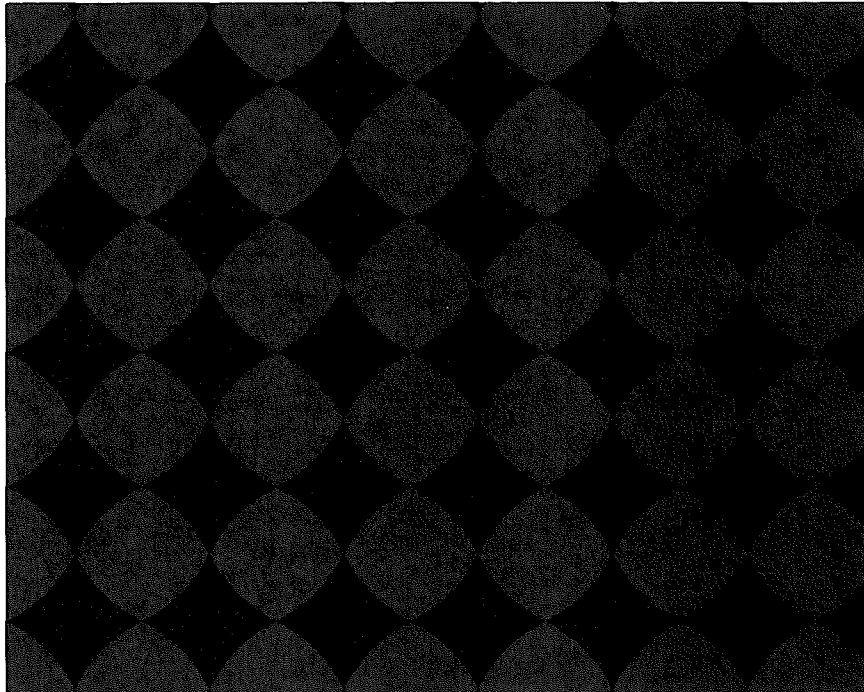
[REDACTED]

[REDACTED]. (See Corr. CX-0667C (Hesselink Witness Statement) at Q/A 63-64 on pp. 30-31; *see also* Hearing Tr. (Mr. Lee) Vol. 3 at 515:12-16 *referring* to Fig. 5 of CX-0056C

(*see below*) [REDACTED]

[REDACTED]

[REDACTED]



(Figure 5 from CX-0056C.)

The ALJ also finds MasterImage's argument that there is

[REDACTED]

[REDACTED]. Further, the record shows that there are

[REDACTED]. (See Hearing Tr. (Mr. Lee) Vol. 3 at

532:16-25.)

[REDACTED]

[REDACTED]

(Hearing Tr. (Mr. Lee) Vol. 3 at 532:16-25.)

- c. “a reflector configured to receive path light energy from one of primary path energy and secondary path light energy and to direct said path light energy toward a surface”

RealD contends this claim limitation is met by [REDACTED] in the accused products.

(CIB at 23.) Specifically, RealD submits that the accused products include a reflector [REDACTED] [REDACTED] configured to receive path light energy from one of primary path energy [REDACTED] [REDACTED] and secondary path light energy [REDACTED] [REDACTED] and to direct said path light energy toward a surface [REDACTED]. (Id. at 24.)

Furthermore, RealD argues that MasterImage does not dispute that this claim limitation reads on the accused products. (*Id.*)

MasterImage does not dispute that this claim limitation reads on the accused products.

(*See* RIB; *see also* RRB.)

The ALJ finds the accused products meet this claim limitation. The record shows that the Horizon 3D and 3D S contain [REDACTED] and thereby meet this limitation as the [REDACTED]

[REDACTED]

[REDACTED] (*See* CX-0046 at MI3D_ITC_000158.) The record also shows that MasterImage’s CEO, Mr. Lee, testified as follows about [REDACTED] in the accused products.

[REDACTED]

[REDACTED]

(Hearing Tr. (Mr. Lee) Vol. 3 at 535:21-536:8.) Additionally, the record shows that Dr. Hesselink observed the presence of the [REDACTED]

[REDACTED]

[REDACTED] (See Corr. CX-0667C at Q/A 64 on pp. 30-31.) The record shows that Dr. Hesselink also stated that [REDACTED]

[REDACTED] (*Id.*)

- d. **“a first polarization modulator positioned in the primary path and configured to receive the primary path of light energy, uniformly modulate the primary path of light energy into primary path modulated light energy, and transmit primary path modulated light energy toward the surface”**

RealD argues that this claim limitation reads on [REDACTED] of all the accused products. (CIB at 25.) First, RealD contends that MasterImage “agrees that the Horizon 3D, 3D S, and [REDACTED] products ‘uniformly modulate;’ in fact, Dr. Kessler [a MasterImage Expert Witness] did not even consider ‘whether Horizon 3D, 3D S, and [REDACTED] meet the uniformly modulate limitation.’” (*Id.*) In any event, RealD submits that MasterImage [REDACTED]

[REDACTED]

[REDACTED]. (*Id.*) But,

RealD avers that in all Accused Products, including the [REDACTED] products,

[REDACTED]

[REDACTED]

[REDACTED]. (*Id.*) RealD,

therefore, contends that consistent with its construction, this claim element reads on all accused products. (*Id.* at 25-26.)

MasterImage contends that if “uniformly modulate” is not found to be indefinite, the [REDACTED] do not meet the “uniformly modulate” limitations under its proposed construction of “any transformation in polarization state resulting from polarization modulation is applied equally to all portions of the incoming light” and therefore do not infringe claim 1 of the ‘455 patent. (RIB at 42.) First, MasterImage points out that RealD’s expert, Dr. Hesselink, conceded at trial that in his witness statement he did not apply MasterImage’s construction of “uniformly modulate” in his infringement analysis but only used RealD’s proposed claim construction and thus there is no evidence that “uniformly modulate” is met under MasterImage’s proposed claim construction. (*Id.*)

MasterImage argues that the [REDACTED] in the [REDACTED]

[REDACTED]

[REDACTED] (See RIB at 45.) Alternatively, MasterImage contends that [REDACTED]

[REDACTED]

[REDACTED] (*Id.*) Specifically, MasterImage points

out that [REDACTED]

[REDACTED]. (*Id.*) Also, MasterImage submits that [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]. (*Id.*) MasterImage then states that because [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]. (*Id.*) Therefore, MasterImage submits that the [REDACTED] in the [REDACTED] [REDACTED] and does not “uniformly modulate” the light as required by independent claim 1 of the ‘455 patent. (*Id.* at 47.)

First, the ALJ notes that MasterImage does not dispute that the Horizon 3D, 3D S and [REDACTED] meet this limitation, but only disputes that the [REDACTED] meet this limitation. (*See generally* RIB at 34-50; RRB at 16-24.) Second, the record shows that each of the accused products contain [REDACTED]

[REDACTED]. (*See* Corr. CX-0667C (Hesselink Witness Statement) at Q/A 68 on pp. 33-34.) Based on testing performed by Dr. Hesselink on the Horizon 3D product, the record shows that [REDACTED]

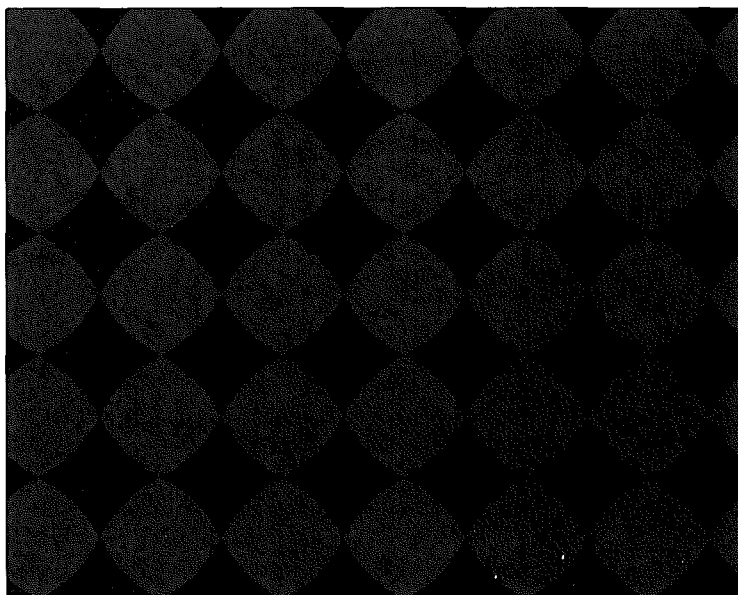
[REDACTED]. (*Id.*) The record also shows that MasterImage’s Dr. Lee testified that [REDACTED] in MasterImage’s accused products is uniform as follows: [REDACTED]

[REDACTED]. (*See* JX-0014C at 144:6-8.) Accordingly, the record shows that the accused products meet this limitation because [REDACTED] in the accused products [REDACTED]

[REDACTED]. (*See* Corr. CX-0667C (Hesselink Witness Statement) at Q/A 69 on pp. 34.)

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The ALJ finds MasterImage's non-infringement argument for this claim limitation based on [REDACTED] in the [REDACTED] products to be incorrect. First, the record shows that MasterImage's argument that the [REDACTED] is being used to [REDACTED] is incorrect —on the contrary it is being used to improve performance and attempts to provide a more uniform output from [REDACTED] products as shown by [REDACTED]. (See CX-0715 at 25 (Figure below.)



(CX-0715C at 25.)

Additionally, the ALJ finds that MasterImage's contention of non-uniform modulation based on the application of [REDACTED] is also incorrect because the record shows that the [REDACTED]. (See Hearing Tr. (Dr. Hesselink) Vol. 4 at 386:4-17.) Specifically, Dr. Hesselink's testimony is:

The second mistake that is made by MasterImage is that voltage is not the appropriate parameter. Modulation polarization is determined by voltage, the electric optic coefficient of the liquid crystal that is being used, the thickness, the wavelengths of light. All these parameters influence what the

polarization switching capabilities of that device are. So to select only the voltage and use that as the parameter that is being used as opposed to the result, it turns out that for the application that MasterImage is using for the large field of view that you heard about yesterday and today, by applying different voltage, you actually make it more uniform modulation of the polarization state.

(See Hearing Tr. (Dr. Hesselink) Vol. 4 at 386:4-17.)

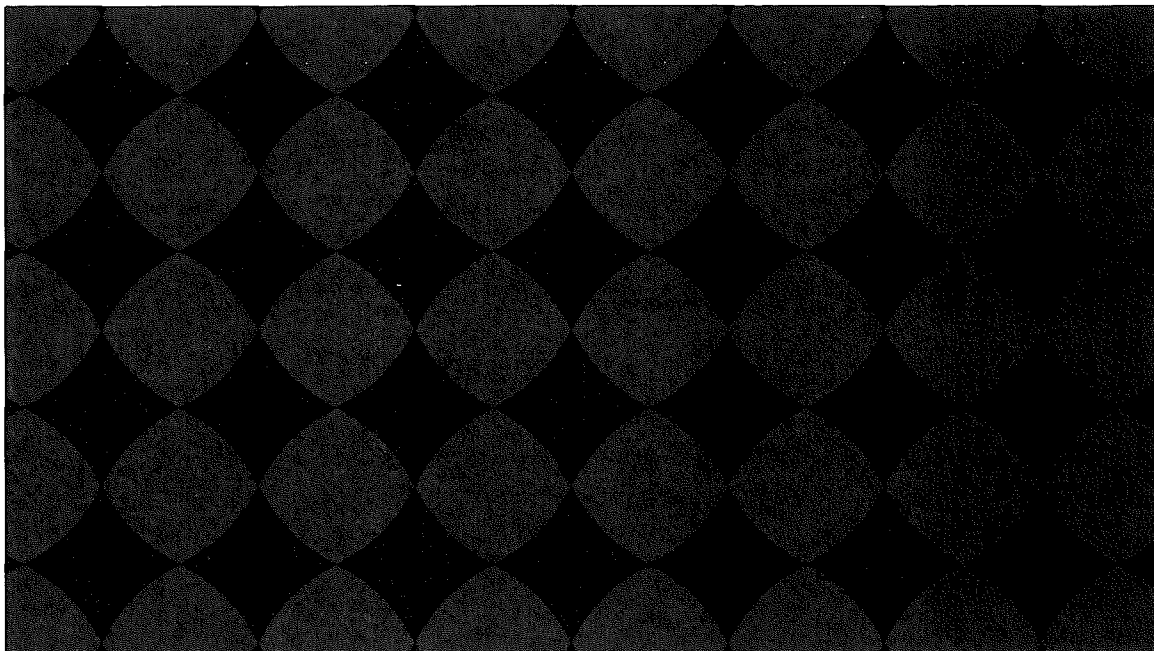
Accordingly, the ALJ finds MasterImage's Horizon 3D, 3D S, [REDACTED] products infringe claim 1 of the '455 patent.

2. Claim 2

For the reasons set forth below, the ALJ finds that RealD has proved by a preponderance of the evidence that MasterImage's Horizon 3D, 3D S, and [REDACTED] infringe claim 2 of the '455 patent.

Dependent claim 2 of the '455 patent is "[t]he apparatus of claim 1, further comprising a retarder configured to receive the secondary path of light energy and transmit retarded secondary path light energy." (JX-0001, Claim 2.) The ALJ has found *supra* in Section V.B.1 that MasterImage's Horizon 3D, 3D S and [REDACTED] meet the limitations of independent claim 1.

The record shows that the additional limitation of claim 2 reads on the [REDACTED] [REDACTED] of the Horizon 3D, 3D S, and [REDACTED] as there is [REDACTED] [REDACTED] [REDACTED]. (See Corr. CX-0667C (Hesselink Witness Statement) at Q/A 72 on pp. 35.) The record also provides evidence within MasterImage documents of [REDACTED] in MasterImage's products as shown in the figure below.



(See CX-0039C at MI3D_ITC_000010.)

Additionally, MasterImage does not contest that the additional limitation of claim 2 reads on the Horizon 3D, 3D S and [REDACTED]. (See generally RIB at 34-50; RRB at 10-26.) Accordingly, the ALJ finds MasterImage's Horizon 3D, 3D S, and [REDACTED] infringe claim 2 of the '455 patent.

3. Claim 3

For the reasons set forth below, the ALJ finds that RealD has proved by a preponderance of the evidence that MasterImage's Horizon 3D, 3D S, [REDACTED] products infringe claim 3 of the '455 patent.

Dependent claim 3 of the '455 patent is "[t]he apparatus of claim 1, wherein the surface comprises a projection screen." (JX-0001, Claim 3.) The ALJ has found *supra* in Section V.B.1 that MasterImage's Horizon 3D, 3D S, [REDACTED] products meet the limitations of independent claim 1.

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The record shows that the additional limitation of claim 3 was observed as the Horizon 3D, 3D S, [REDACTED] products [REDACTED]. (See Corr. CX-0667C (Hesselink Witness Statement) at Q/A 77 on pp. 37.)

The record also shows that MasterImage's CEO, Mr. Lee, admitted that [REDACTED]. (See Hearing Tr. (Mr. Lee) Vol. 3 at 536:17-20 [REDACTED])

[REDACTED] Additionally, MasterImage does not contest that the additional limitation of claim 3 reads on the Horizon 3D, 3D S, [REDACTED] products. (See RIB at 34-50; RRB at 10-26.) Accordingly, the ALJ finds MasterImage's Horizon 3D, 3D S, [REDACTED] products infringe claim 3 of the '455 patent.

4. Claim 9

For the reasons set forth below, the ALJ finds that RealD has proved by a preponderance of the evidence that MasterImage's Horizon 3D, 3D S, [REDACTED] products infringe claim 9 of the '455 patent.

Dependent claim 9 of the '455 patent is "[t]he apparatus of claim 1, wherein the polarization modulator comprises a push-pull modulator." (JX-0001, Claim 9.) The ALJ has found *supra* in Section V.B.1 that MasterImage's Horizon 3D, 3D S, [REDACTED] products meet the limitations of independent claim 1.

The record shows that MasterImage's CEO, Mr. Lee, stated that [REDACTED]. (See Hearing Tr. (Mr. Lee) Vol. 3 at 538:22-25 [REDACTED])

[REDACTED] Additionally, MasterImage 3-D Asia LLC Vice President and Head of Research & Development, Dr. Chul-Woo Lee, also stated that the

[REDACTED]. (See Hearing Tr. (Dr. Lee) Vol. 1 at 164:3-6 [REDACTED])

[REDACTED] Further, MasterImage does not contest that the additional limitation of claim 9 reads on the Horizon 3D, 3D S, [REDACTED] products. (See RIB at 34-50; RRB at 10-26..) Accordingly, the ALJ finds MasterImage's Horizon 3D, 3D S, [REDACTED] products infringe claim 9 of the '455 patent.

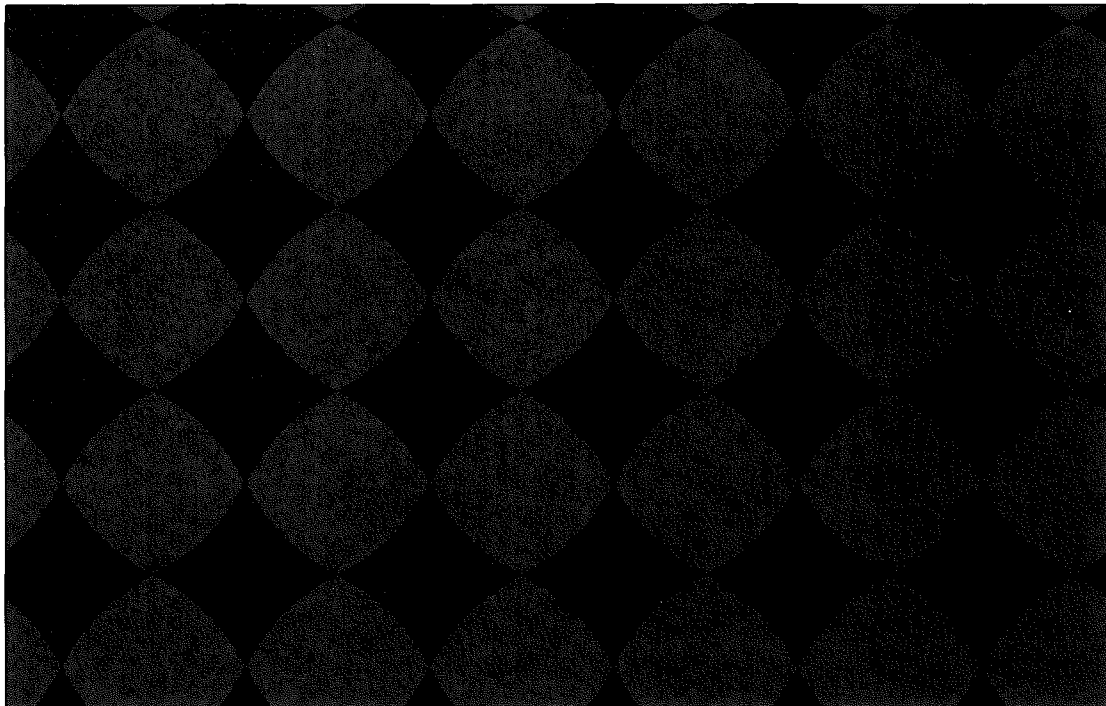
5. Claim 10

For the reasons set forth below, the ALJ finds that RealD has proved by a preponderance of the evidence that MasterImage's Horizon 3D, 3D S, [REDACTED] products infringe claim 10 of the '455 patent.

Dependent claim 10 of the '455 patent is "[t]he apparatus of claim 1, wherein the polarizing splitting element comprises one from a group comprising: a polarizing beamsplitter; a wire grid polarizer; and a MacNeille prism." (JX-0001, Claim 10.) The ALJ has found *supra* in Section V.B.1 that MasterImage's Horizon 3D, 3D S, [REDACTED] products meet the limitations of independent claim 1.

The record shows that the additional limitation of claim 10 was observed from physical samples as [REDACTED]. (See Corr. CX-0667C (Hesselink Witness Statement) at Q/A 1-2 on pp. 39.) Additionally, the record shows that MasterImage's CEO, Mr. Lee, testified that there is a [REDACTED] in the Horizon 3D and 3D S products. (See, e.g., Hearing Tr. Vol. 3 at 527:1-12, 531:1-10, 533:1-6, 545:3-6; JX-0018C at 391:8-14, 391:23-392:7, 392:15-21, 396:1-4, 404:3-7, 423:3-19.) Further, the record shows that MasterImage 3-D Asia LLC Vice President and Head of Research & Development, Dr. Chul-Woo Lee, also testified that there is [REDACTED] in the [REDACTED] products. (See, e.g.,

Hearing Tr. Vol. 1 at 108:10-16, 112:1-3, 116:19-25, 119:8-12; JX-0014C at 98:22-99:2, 99:4-9, 160:2-4, 158:8-14, 160:5-8; JX-0015C at 224:10-12, 224:13-17, 224:18-21, 225:10-19, 226:5-8, 228:5-22.) The record also provides evidence within MasterImage documents of [REDACTED] in MasterImages products as shown in the figure below.



(CX-0039C at MI3D_ITC_000010.) Further, MasterImage does not contest that the additional limitation of claim 10 reads on the Horizon 3D, 3D S, [REDACTED] products. (See RIB at 34-50; RRB at 10-26.) Accordingly, the ALJ finds MasterImage's Horizon 3D, 3D S, [REDACTED] products infringe claim 10 of the '455 patent.

6. Claim 11

For the reasons set forth below, the ALJ finds that RealD has proved by a preponderance of the evidence that MasterImage's Horizon 3D, 3D S, [REDACTED] products infringe claim 11 of the '455 patent.

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Dependent claim 11 of the '455 patent is “[t]he apparatus of claim 1, further comprising a primary path element arrangement configured to substantially optically superimpose light energy transmission between the second path and the first path.” (JX-0001, Claim 11.) The ALJ has found *supra* in Section V.B.1 that MasterImage’s Horizon 3D, 3D S, [REDACTED] products meet the limitations of independent claim 1.

RealD contends that the additional limitation of claim 11 reads on [REDACTED] in the Horizon accused products. (CIB at 33.) First, RealD contends that MasterImage’s CEO, Mr. Lee, testified that [REDACTED]
[REDACTED]. (*Id.*) Next, RealD submits that various MasterImage documents show [REDACTED]
[REDACTED]. (*Id.*) Further, RealD points out that its expert, Dr. Hesselink, observed that, when the Horizon 3D, [REDACTED] products were [REDACTED]
[REDACTED]. (*Id.* at 34.) Last, RealD contends that MasterImage’s argument based on [REDACTED] prisms of the accused products not meeting the “primary path element arrangement” specified in claim 11 because, in the specification, “the additional ‘primary path element arrangement’ of dependent claim 11 corresponds” [REDACTED]
[REDACTED] (*see* CRB at 35-36) is incorrect because there is nothing in the language of claims 1 and 11 that prevents the “primary path” from being one of the reflected paths.

MasterImage argues that the additional limitation of claim 11 is not met because there are [REDACTED]
[REDACTED] (RIB at 48.) In other words, MasterImage

contends that [REDACTED]

[REDACTED] (*Id.*) Additionally, MasterImage contends that [REDACTED] in the accused products identified by RealD as meeting the limitations of claim 11 are [REDACTED] because MasterImage submits that the '455 patent states that the primary path is the transmissive path and the secondary path is the reflected path. (RRB at 25.) MasterImage argues that RealD cannot now declare that “while the claim recites ‘primary path’ element arrangement, either the transmitted P path or the reflected S path can be designated to be the primary path.” (*Id.*; quoting CIB at 34.)

The ALJ finds that the accused products meet the additional limitation of claim 11. First, the record shows that when the Horizon 3D, [REDACTED] products [REDACTED]. (See Corr. CX-0667C (Hesselink Witness Statement) at Q/A 4 on pp. 39-40.) Next, the record shows that [REDACTED]. (*Id.*) The record also shows that [REDACTED]. (*Id.*) The record shows that claim 1 allows either the transmitted P path or the reflected S path to be the primary path and the secondary path. (*Id.*)

The record also shows that MasterImage’s CEO, Mr. Lee, testified that the [REDACTED]. (See Hearing Tr. (Mr. Lee) Vol. 3 at 536:13-537:3.) Specifically, Mr. Lee testified as follows:

[REDACTED]

[REDACTED]

(Hearing Tr. (Mr. Lee) Vol. 3 at 536:13-537:3.) Additionally, the Horizon 3D and Horizon 3D S

[REDACTED]

[REDACTED]. (See CX-0046 at

MI3D_ITC_000158-9.)

The ALJ finds MasterImage’s argument based on [REDACTED] of the accused products not meeting the “primary path element arrangement” specified in claim 11 is unpersuasive because, in the specification, “the additional ‘primary path element arrangement’ of dependent claim 11 corresponds” to [REDACTED] to be unpersuasive. First, the ALJ finds that the language of claims 1 and 11 does not preclude the “primary path” as being one of the reflected paths. Second, the ALJ finds MasterImage’s reliance on embodiments in the specification to argue that the primary path must be the transmitted path for claim 1 and claim 11 to be incorrect as the claims cannot be so limited by the specification. (See *Phillips*, 415 F.3d at 1323 (“For instance, although the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments.”).)

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Accordingly, the ALJ finds that either the transmitted path or the reflected path can be designated to be the primary path and the primary path element arrangement reads on the [REDACTED] of the accused products because the [REDACTED]. Therefore, MasterImage's Horizon 3D, 3D S, [REDACTED] products infringe claim 11 of the '455 patent.

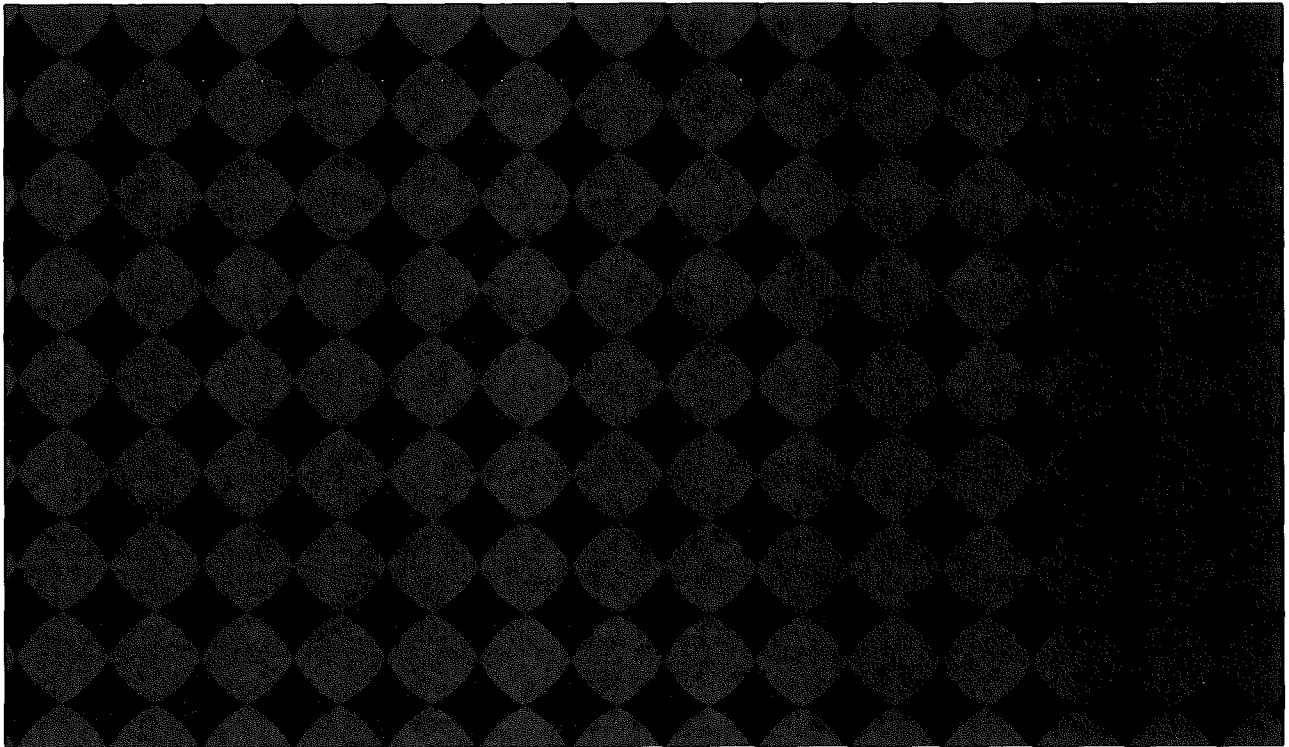
7. Claim 13

For the reasons set forth below, the ALJ finds that RealD has proved by a preponderance of the evidence that MasterImage's Horizon 3D, 3D S, and [REDACTED] infringe claim 13 of the '455 patent.

Dependent claim 13 of the '455 patent is "[t]he apparatus of claim 2, wherein the retarder is a half wave retarder." (JX-0001, Claim 13.) The ALJ has found *supra* in Sections V.B.1 and V.B.2 that MasterImage's Horizon 3D, 3D S, and [REDACTED] meet the limitations of independent claim 1 and dependent claim 2.

The record shows that MasterImage's CEO, Mr. Lee, stated that [REDACTED] of the Horizon 3D, 3D S, and [REDACTED] include [REDACTED]. (See Hearing Tr. (Mr. Lee) Vol. 3 at 529:7-10 [REDACTED])

[REDACTED] The record also provides evidence within MasterImage documents of [REDACTED] in MasterImage's products as shown in the figure below.



(CX-0039C at MI3D_ITC_000010.)

Further, MasterImage does not contest that the additional limitation of claim 13 reads on the Horizon 3D, 3D S, and [REDACTED]. (See RIB; see also RRB.) Accordingly, the ALJ finds MasterImage's Horizon 3D, 3D S, and [REDACTED] infringe claim 13 of the '455 patent.

8. Claim 15

For the reasons set forth below, the ALJ finds that RealD has proved by a preponderance of the evidence that MasterImage's Horizon 3D, 3D S, [REDACTED] products infringe claim 15 of the '455 patent.

Dependent claim 15 of the '455 patent is "[t]he apparatus of claim 9, wherein the push pull modulator comprises an arrangement of two pi-cells having axes crossed and driven out of phase." (JX-0001, Claim 15.) The ALJ has found *supra* in Sections V.B.1 and V.B.4 that MasterImage's Horizon 3D, 3D S, [REDACTED] products meet the limitations of independent claim 1 and dependent claim 9.

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The record shows that MasterImage's CEO, Mr. Lee, stated that [REDACTED] in the Horizon 3D and 3D S products are [REDACTED]. (See Hearing Tr. (Mr. Lee) Vol. 3 at 538:22-25 [REDACTED]

[REDACTED] Additionally, MasterImage 3-D Asia LLC Vice President and Head of Research & Development, Dr. Chul-Woo Lee, also stated that the products [REDACTED]. (See Hearing Tr. (Dr. Lee) Vol. 1 at 139:16-18 [REDACTED]

[REDACTED] Further, MasterImage does not contest that the additional limitation of claim 15 reads on the Horizon 3D, 3D S, products. (See RIB at 34-50; RRB at 10-26.) Accordingly, the ALJ finds MasterImage's Horizon 3D, 3D S, [REDACTED] products infringe claim 15 of the '455 patent.

9. Claim 17

For the reasons set forth below, the ALJ finds that RealD has proved by a preponderance of the evidence that MasterImage's Horizon 3D, 3D S, [REDACTED] products infringe claim 17 of the '455 patent.

a. "An apparatus for projecting stereoscopic images, comprising:"

Since the ALJ found that the preamble is not a limitation as explained *supra* in IV.B.3, the accused products do not need to be compared to the preamble.

b. " a splitter configured to split the image received into a primary path and a secondary path"

As explained *supra* in Section V. B.1.b, the accused products meet this limitation.

c. “a reflector positioned in the secondary path configured to reflect secondary path light energy”

Section V.B.1.c applies to this limitation because the record shows that [REDACTED] of the accused products are located in [REDACTED]. (See Hearing Tr. (Mr. Lee) Vol. 3 at 535:25-536:2 [REDACTED])

[REDACTED] Accordingly, as explained *supra* in Section V.B.1.c, the accused products meet this limitation.

d. “a polarization modulator arrangement comprising at least one polarization modulator positioned in the primary path and configured to uniformly modulate the primary path of light energy; wherein the polarization modulator arrangement additionally uniformly modulates secondary path light energy”

Section V.B.1.d applies to this limitation because the only difference between this limitation and the corresponding “polarization modulator” limitation of claim 1 is that in this limitation “the polarization modulator arrangement additionally uniformly modulates secondary path light energy.” The record shows that the accused products have [REDACTED]

[REDACTED]. Further, Mr. Lee testified that the record shows that the [REDACTED]

[REDACTED]. (See Hearing Tr. (Mr. Lee) Vol. 3 at 529:24-530:2 [REDACTED])

[REDACTED] The record also provides evidence within MasterImage documents of [REDACTED] of the accused products. (See CX-0039C at MI3D_ITC_000010.) Thus, as explained *supra* in Section V.B.1.d, the accused products meet this limitation.

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Accordingly, the ALJ finds MasterImage's Horizon 3D, 3D S, [REDACTED] products infringe claim 17 of the '455 patent.

10. Claim 18

For the reasons set forth below, the ALJ finds that RealD has proved by a preponderance of the evidence that MasterImage's Horizon 3D, 3D S, and [REDACTED] infringe claim 18 of the '455 patent.

Dependent claim 18 of the '455 patent is "[t]he apparatus of claim 17, further comprising a retarder positioned in one of the primary path and the secondary path and configured to rotate light energy received." (JX-0001, Claim 18.) The ALJ has found *supra* in Section V.B.9 that MasterImage's Horizon 3D, 3D S and [REDACTED] meet the limitations of independent claim 17.

As explained *supra* in Section V.B.2, the Horizon 3D, 3D S, and [REDACTED] have [REDACTED]
[REDACTED]
[REDACTED]. (See Corr. CX-0667C (Hesselink Witness Statement) at Q/A 24 on pp. 47.) Additionally, MasterImage does not contest that the additional limitation of claim 18 reads on the Horizon 3D, 3D S and [REDACTED]. (See RIB at 34-50; RRB at 10-26.) Accordingly, the ALJ finds MasterImage's Horizon 3D, 3D S, and [REDACTED] infringe claim 18 of the '455 patent.

11. Claim 19

For the reasons set forth below, the ALJ finds that RealD has proved by a preponderance of the evidence that MasterImage's Horizon 3D, 3D S, [REDACTED] products infringe claim 19 of the '455 patent.

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Dependent claim 19 of the '455 patent is “[t]he apparatus of claim 17, wherein the polarization modulator arrangement comprises two polarization modulators, one in the primary path and one in the secondary path.” (JX-0001, Claim 19.) The ALJ has found *supra* in Section V.B.9 that MasterImage’s Horizon 3D, 3D S, [REDACTED] products meet the limitations of independent claim 17.

The record provides evidence within MasterImage documents of [REDACTED] of [REDACTED] of the accused products. (See CX-0039C at MI3D_ITC_000010.) Additionally, MasterImage does not contest that the additional limitation of claim 19 reads on the Horizon 3D, 3D S, [REDACTED] products. (See RIB at 34-50; RRB at 10-26.) Accordingly, the ALJ finds MasterImage’s Horizon 3D, 3D S, [REDACTED] products infringe claim 19 of the '455 patent.

12. Claim 21

For the reasons set forth below, the ALJ finds that RealD has proved by a preponderance of the evidence that MasterImage’s Horizon 3D, 3D S, [REDACTED] products infringe claim 21 of the '455 patent.

Dependent claim 21 of the '455 patent is “[t]he apparatus of claim 17, further comprising elements configured to substantially optically superimpose light energy transmission between the primary path and the secondary path.” (JX-0001, Claim 21.) The ALJ has found *supra* in Section V.B.9 that MasterImage’s Horizon 3D, 3D S, [REDACTED] products meet the limitations of independent claim 17.

As explained *supra* in Section V.B.6, the additional limitation of claim 21 reads on the [REDACTED] contained in each of the accused products. Accordingly, the ALJ finds

MasterImage's Horizon 3D, 3D S, [REDACTED] products infringe claim 21 of the '455 patent.

C. '296 Patent

1. Claim 1

For the reasons set forth below, the ALJ finds that RealD has proved by a preponderance of the evidence that MasterImage's Horizon 3D Dual and 3D S Dual products infringe claim 1 of the '296 patent.

The record shows that the Horizon 3D Dual uses [REDACTED] and the Horizon 3D S Dual uses [REDACTED]; however, the dual products use [REDACTED]. (See Corr. CX-0667C (Hesselink Witness Statement) at Q/A 38 on pp. 17.) Additionally, the '296 patent has the same disclosure as the '455 patent; however, the '296 patent claims are directed to a dual project arrangement described in the patent. (See JX-0003; see also Corr. RX-0590C (Kessler Witness Statement) at Q/A 282 [REDACTED]

[REDACTED]

[REDACTED] (See generally CIB at 99-102; RIB at 34-41.) Specifically, [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]. (See CIB at 99-102.) Further, [REDACTED]

[REDACTED]. (See e.g., RIB at 35 (Section V.C. "The Horizon

Products Do Not Meet The Preamble Limitations Of The Asserted Independent Claims Of The

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'455, '296 And '934 Patents And, Therefore, No Asserted Claim Is Infringed"); *see also* RIB at 36 (Section V.D. "The Horizon Products Do Not Meet The "Splitting" Limitation And "Direct First Light Bundles" Limitation Of The Asserted Independent Claims Of The '455, '296 Or '934 Patents And, Therefore, No Asserted Claim Is Infringed").)

a. Preamble: "Apparatus for projecting stereoscopic images, comprising:"

Since the ALJ found that the preamble is not a limitation as explained *supra* in IV.C.3, the accused products do not need to be compared to the preamble.

- b. "a first polarizing splitting element configured to receive first image light energy and split the first image light energy received along a first primary path and along a first secondary path" & "a second polarizing splitting element configured to receive second image light energy and split the second image light energy received along a second primary path and along a second secondary path"**

For the same reasons as set forth *supra* in Section V.B.1.b., the ALJ finds that the Horizon 3D Dual and the Horizon 3D S Dual products meet this claim limitation.

- c. "a first reflector configured to receive one of first primary path of light energy and first secondary path of light energy and to reflect the one of first primary path of light energy and first secondary path of light energy toward a surface" & "a second reflector configured to receive one of second primary path of light energy and second secondary path of light energy and to reflect the one of second primary path of light energy and second secondary path of light energy toward a surface"**

For the same reasons as set forth *supra* in Section V.B.1.c., the ALJ finds that the Horizon 3D Dual and the Horizon 3D S Dual products meet this claim limitation.

- d. "a first rotator configured to receive one of first primary path of light energy and first secondary path of light energy and to rotate the one of first primary path of light energy and first secondary path of light energy" & "a second rotator configured to receive one of second primary path of light energy and second secondary path of light energy and to rotate the one of second primary path of light energy and second secondary path of light energy"**

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For the same reasons as set forth *supra* in Section V.B.1.d., the ALJ finds that the Horizon 3D Dual and the Horizon 3D S Dual products meet this claim limitation.

Accordingly, the ALJ finds MasterImage's Horizon 3D Dual and 3D S Dual products infringe claim 1 of the '296 patent.

2. Claim 2

For the reasons set forth below, the ALJ finds that RealD has proved by a preponderance of the evidence that MasterImage's Horizon 3D Dual and 3D S Dual products infringe claim 2 of the '296 patent.

Dependent claim 2 of the '296 patent is “[t]he apparatus of claim 1, wherein the first and second rotators are configured to rotate the one of first primary path of light energy and first secondary path of light energy and the one of second primary path of light energy and second secondary path of light energy by 90 degrees.” (JX-0003, Claim 2.) The ALJ has found *supra* in Section V.C.1 that MasterImage's Horizon 3D Dual and 3D S Dual products meet the limitations of independent claim 1.

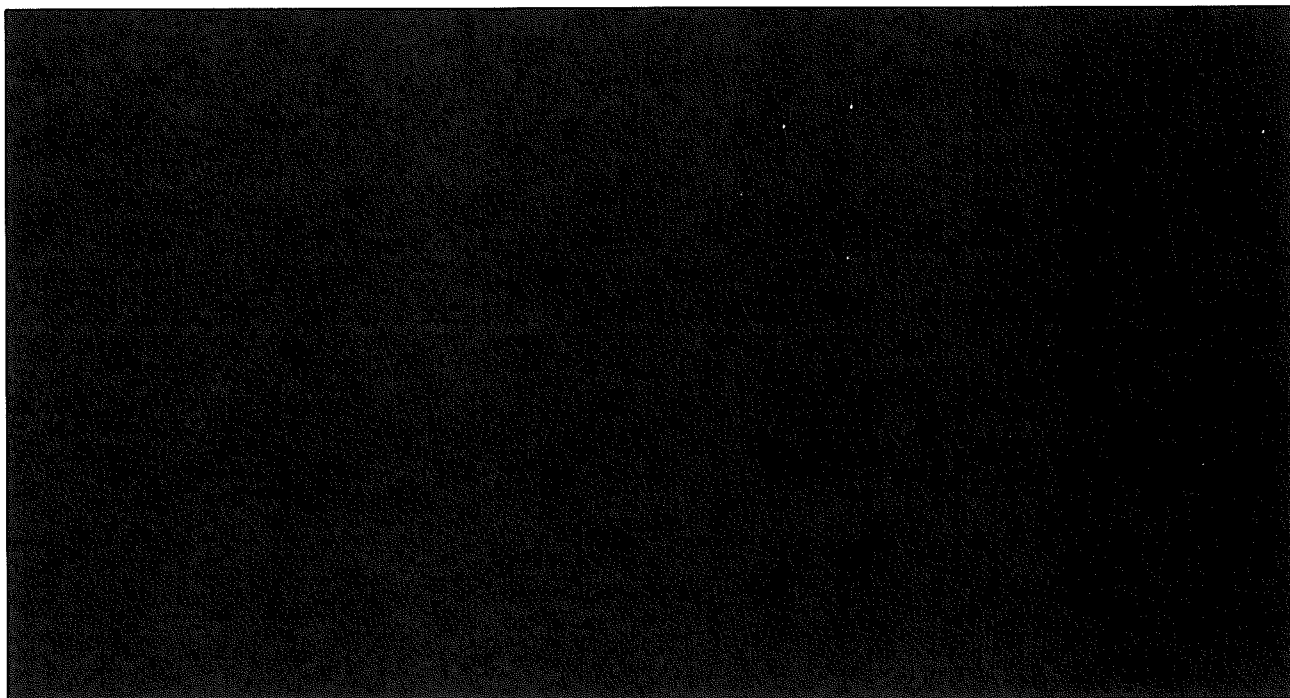
The ALJ finds that this additional limitation reads on the [REDACTED] of the Horizon 3D Dual and 3D S Dual products for the same reasons that the claim limitation “a retarder configured to receive the secondary path of light energy and transmit retarded secondary path light energy” of claim 2 of the '455 patent reads on the Horizon 3D and 3D S products as explained *supra* in Section V.B.2. Additionally, MasterImage does not contest that the additional limitation of claim 2 reads on the Horizon 3D Dual and 3D S Dual products. (*See* RIB at 34-50; RRB at 10-26.) Accordingly, the ALJ finds MasterImage's Horizon 3D Dual and 3D S Dual products infringe claim 2 of the '296 patent.

3. Claim 7

For the reasons set forth below, the ALJ finds that RealD has proved by a preponderance of the evidence that MasterImage's Horizon 3D Dual and 3D S Dual products infringe claim 7 of the '296 patent.

Dependent claim 7 of the '296 patent is "[t]he apparatus of claim 1, wherein the first rotator is positioned between the first polarizing splitting element and the surface." (JX-0003, Claim 7.) The ALJ has found *supra* in Section V.C.1 that MasterImage's Horizon 3D Dual and 3D S Dual products meet the limitations of independent claim 1.

The ALJ finds that this additional limitation reads on the [REDACTED] of the Horizon 3D Dual and 3D S Dual products [REDACTED] as explained *supra* in Section V.B.2. Specifically, the record shows that the additional limitation is met because there is [REDACTED] as shown in the figure below.




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(See CX-0039C at MI3D_ITC_000010).) Further, MasterImage does not contest that the additional limitation of claim 7 reads on the Horizon 3D Dual and 3D S Dual products. (See RIB at 34-50; RRB at 10-26.) Accordingly, the ALJ finds MasterImage’s Horizon 3D Dual and 3D S Dual products infringe claim 7 of the ’296 patent.

4. Claim 8

For the reasons set forth below, the ALJ finds that RealD has proved by a preponderance of the evidence that MasterImage’s Horizon 3D Dual and 3D S Dual products infringe claim 8 of the ’296 patent.

Dependent claim 8 of the ’296 patent is “[t]he apparatus of claim 1, wherein the second rotator is positioned between the second polarizing splitting element and the surface.” (JX-0003, Claim 7.) The ALJ has found *supra* in Section V.C.1 that MasterImage’s Horizon 3D Dual and 3D S Dual products meet the limitations of independent claim 1.

For the same reason as set forth *supra* in Sections V.B.2 and V.C.3, the ALJ finds that this additional limitation reads on the  of the Horizon 3D Dual and 3D S Dual products. Additionally, MasterImage does not contest that the additional limitation of claim 8 reads on the Horizon 3D Dual and 3D S Dual products. (See RIB at 34-50; RRB at 10-26.) Accordingly, the ALJ finds MasterImage’s Horizon 3D Dual and 3D S Dual products infringe claim 8 of the ’296 patent.

5. Claim 11

For the reasons set forth below, the ALJ finds that RealD has proved by a preponderance of the evidence that MasterImage’s Horizon 3D Dual and 3D S Dual products infringe claim 11 of the ’296 patent.

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Dependent claim 11 of the '296 patent is “[t]he apparatus of claim 1, wherein the surface comprises a projection screen.” (JX-0003, Claim 11.) The ALJ has found *supra* in Section V.C.1 that MasterImage’s Horizon 3D Dual and 3D S Dual products meet the limitations of independent claim 1.

For the same reason as set forth *supra* in Sections V.B.3, the ALJ finds that this additional limitation is present in the Horizon 3D Dual and 3D S Dual products. Additionally, MasterImage does not contest that the additional limitation of claim 11 reads on the Horizon 3D Dual and 3D S Dual products. (See RIB at 34-50; RRB at 10-26.) Accordingly, the ALJ finds MasterImage’s Horizon 3D Dual and 3D S Dual products infringe claim 11 of the '296 patent.

6. Claim 12

For the reasons set forth below, the ALJ finds that RealD has proved by a preponderance of the evidence that MasterImage’s Horizon 3D Dual and 3D S Dual products infringe claim 12 of the '296 patent.

Dependent claim 12 of the '296 patent is “[t]he apparatus of claim 1, wherein the polarizing splitting element comprises one from a group comprising: a polarizing beamsplitter; a wire grid polarizer; and a MacNeille prism.” (JX-0003, Claim 12.) The ALJ has found *supra* in Section V.C.1 that MasterImage’s Horizon 3D Dual and 3D S Dual products meet the limitations of independent claim 1.

For the same reason as set forth *supra* in Sections V.B.5, the ALJ finds that this additional limitation is present in the Horizon 3D Dual and 3D S Dual products. Additionally, MasterImage does not contest that the additional limitation of claim 12 reads on the Horizon 3D Dual and 3D S Dual products. (See RIB at 34-50; RRB at 10-26.) Accordingly, the ALJ finds MasterImage’s Horizon 3D Dual and 3D S Dual products infringe claim 12 of the '296 patent.

D. '934 Patent

RealD argues that MasterImage's Horizon 3D, 3D S, and [REDACTED] infringe claims 1, 6 and 11 of the '934 Patent. (CIB at 116-123.) MasterImage argues that its products do not infringe independent claim 1 for the same reasons set forth *supra* for the '455 and the '296 patents, namely that its products do not meet the (1) preamble and (2) the "directing"/ "splitting" limitation. (RIB at 34-41.) MasterImage makes no non-infringement arguments for claims 6 and 11. (*See generally* RIB at 34-49.)

1. Claim 1

a. "A stereoscopic system comprising"

As set forth *supra* in Sections IV.B.3 and IV.D.3, the ALJ found that the preamble was not limiting. Consequently, MasterImage's non-infringement arguments relating thereto are moot.

b. "a polarization beam splitter (PBS) operable to direct first light bundles having a first state of polarization (SOP) along a first light path, and direct second light bundles having a second SOP along a second light path"

As set forth *supra* in Section IV.D.4, the ALJ found that this claim term should be given its plain and ordinary meaning. The parties treat this claim limitation as the same as the "splitting" limitations in the '455 patent and, accordingly, the ALJ does the same. (CIB at 117 ("See Section III.C.2.b, which is incorporated herein in its entirety."); RIB at 36-41 (addressing non-infringement arguments for the "splitting" limitation and "direct first light bundles" limitations collectively).) Thus, for the same reasons set forth above in Section V.B.1.b, the ALJ finds that RealD has shown by a preponderance of the evidence that Horizon 3D, 3D S, and [REDACTED]

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meet this limitation and, further, that MasterImage's non-infringement arguments fail for the same reasons.

The evidence shows that the in the Horizon 3D, 3D S, and meet this limitation. (Corr. CX-0667C at Q&A 36.) Specifically, the evidence shows in the Horizon 3D, 3D S, and

. (Id.; CDX-0019; CX-0590C at REALD_ITC_0143377; CX-0619 at REALD_ITC_0145418; CX-0042C; CX-0046; CX-0169C; CX-0143C; CX-0146C; CX-0148C; CPX-0003C,.) In other words, the evidence shows that the

. (Id. at Q&A 36.)

(Id.) Thus, the evidence shows that the Horizon 3D, 3D S, and

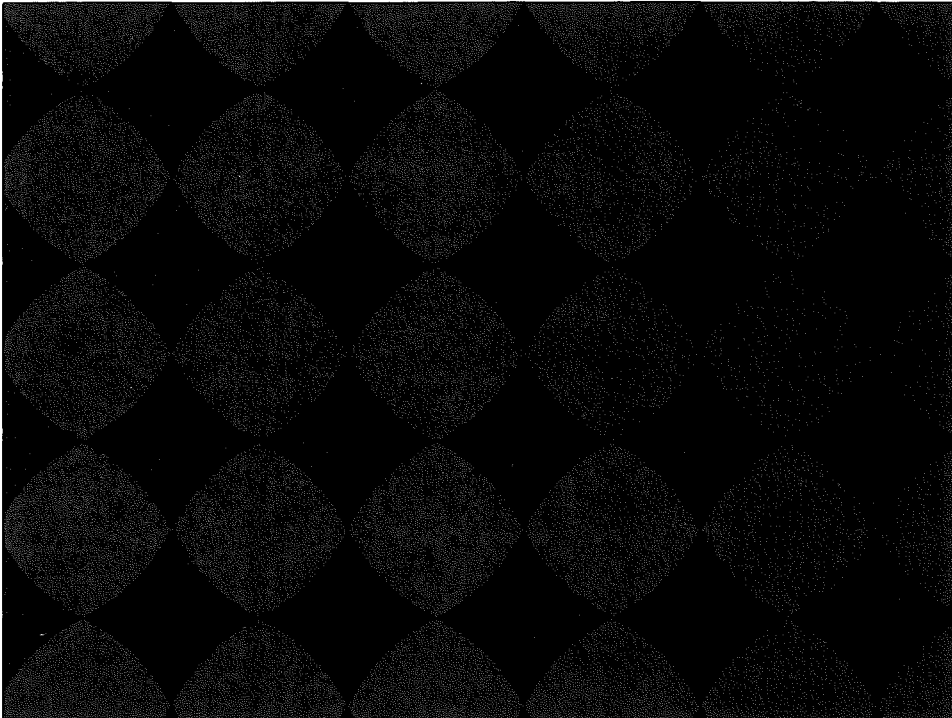
- c. **“a polarization rotator located on the second light path, the polarization rotator being operable to translate the second SOP to the first SOP”**

The evidence shows that this claim limitation is met by the in the Horizon 3D, 3D S, and . (Corr. CX-0667C at Q&A 40.) MasterImage does not dispute that the Horizon 3D, 3D S, and meet this limitation. (See generally RIB at 34-50; RRB at 10-26.) Indeed, as set forth *supra* in Section V.B.2, the ALJ found that

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The evidence shows that the [REDACTED]

[REDACTED]. (Corr. CX-0667C at Q&A 40.)



(CDX-0019C at Slide 10; CX-0619C at REALD_ITC0145438, REALD_ITC0145436, REALD_ITC0145437, REALD_ITC0145439.) Specifically, [REDACTED]

[REDACTED]. (*Id.*)

On the other hand, [REDACTED]

[REDACTED]. (*Id.*) Thus, [REDACTED]

[REDACTED]. (*Id.* at

Q&A 41; CDX-0029C at Slide 6; CX-0711C at 393:2-7, 399:1-2; 400:24-25 and 401:13-21; CDX-0030C at Slide 8; CX-0689C at 163:3-16; CX-0690C at 252:16-20.) Thus, [REDACTED]

[REDACTED]

[REDACTED]. (*Id.* at Q&A 40.)

- d. **“a polarization switch subsystem operable to receive first and second light bundles from the first and second light paths respectively, and to selectively translate both the polarization states of the first and second light bundles to one of a first output SOP and a second output SOP”**

The evidence shows that this claim limitation is met by [REDACTED] in the Horizon 3D, 3D S, and [REDACTED]. (CX-0667C at Q&A 42.) [REDACTED]

[REDACTED]

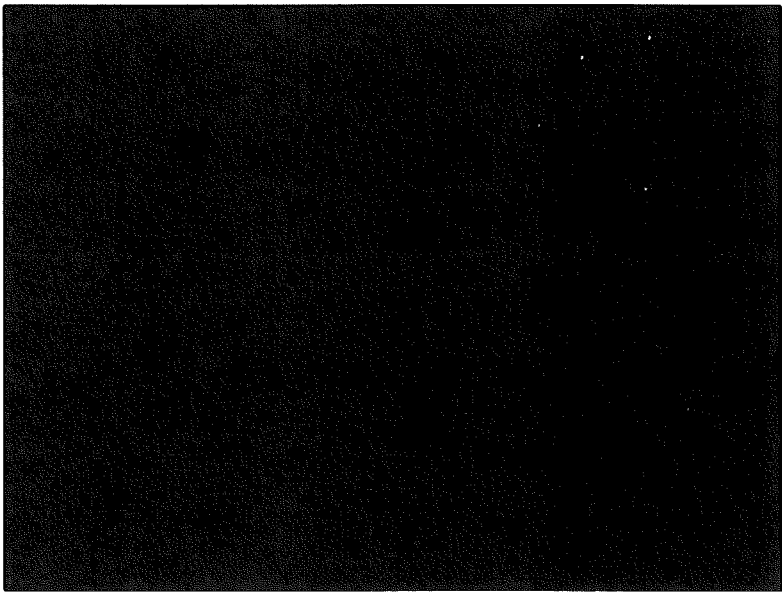
[REDACTED]

[REDACTED]

[REDACTED] (*Id.*) Using 3D glasses, Dr. Hesselink observed that

[REDACTED]

[REDACTED]. (*Id.*)



(*Id.*; CDX-0019C at Slide 7; CX-0619C at REALD_ITC0145444, REALD_ITC0145491, REALD_ITC0145535.) This shows that the [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]. (*Id.*; *see also* CDX-0019C at Slide 9 (video clips; Tr. (Lee) at 534:18-22; 535:9-15 [REDACTED]
[REDACTED]
[REDACTED]; 529:7-10, 529:24-530:2; 537:4-8; 130:3-8 (testifying regarding [REDACTED] Product); 143:16-22; 129:9-11; 130:6-8 (testifying regarding [REDACTED] Product); CX-0039C (MasterImage presentation) at MI3D_ITC_000009-11; CX-0143C at MI3D_ITC_938319; CX-0146C at MI3D_ITC_938640; CX-0148C at MI3D_ITC_938686.)

Thus, as set forth *supra*, the ALJ finds that RealD has shown by a preponderance of the evidence that the Horizon 3D, 3D S, and [REDACTED] infringe claim 1 of the '934 Patent.

2. Claim 6

RealD argues that the Horizon 3D, 3D S, and [REDACTED] infringe dependent claim 6. (CIB at 121-122.) MasterImage does not dispute that its products meet this claim limitation. (*See generally* RIB at 34-50; RRB at 10-26.)

Dependent claim 6 depends from independent claim 1. As set forth *supra* in Section V.D.1, the ALJ found that the Horizon 3D, 3D S, and [REDACTED] infringe claim 1 of the '934 patent. Claim 6 requires that “the polarization switch subsystem selects between the first and the second output SOP in synchronization with transmission of an image frame by a projector.” (the '934 patent at 8:22-25.)

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The evidence shows that the Horizon 3D, 3D S, and [REDACTED] meet this limitation. Specifically, the additional limitation of claim 6 reads on [REDACTED] present in the Horizon 3D, 3D S, and [REDACTED]. (Corr. CX-0667C at Q&A 44.) As set forth *supra* in Section V.D.1.c, the evidence shows that [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]. (*Id.* at Q&A 47; *see also* JX-0018C at 402:10-17 [REDACTED]

[REDACTED], 402:23-403:8; JX-0014C at 165:10-16 (describing the [REDACTED] product); RX-

0250C at Q&A 31; CX-0046 at MI3D_ITC_000146 (Horizon 3D and 3D S operation manuals).)

Therefore, the ALJ finds that RealD has shown by a preponderance of the evidence that Horizon 3D, 3D S, and [REDACTED] infringe claim 6 of the '934 patent.

3. Claim 11

RealD argues that the Horizon 3D, 3D S, and [REDACTED] infringe dependent claim 11. (CIB at 122-123.) MasterImage does not dispute that its products meet this claim limitation. (*See generally* RIB at 34-50; RRB at 10-26.)

Dependent claim 11 depends from independent claim 1. As set forth *supra* in Section V.D.1, the ALJ found that the Horizon 3D, 3D S, and [REDACTED] infringe claim 1 of the '934 Patent. Claim 11 requires that “the polarization switch subsystem comprises first and second polarization switch panels, the first polarization switch panel receiving light from the first light path, and the second polarization switch panel receiving light from the second light path.” (the '934 patent at 8:35-40.)

The evidence shows that the Horizon 3D, 3D S, and [REDACTED] infringe claim 11 of the '934 patent. (Corr. CX-0667C at Q&A 49.) Specifically, the additional limitation of claim

11 reads on the [REDACTED]

[REDACTED]

[REDACTED]. In other words, there is a

[REDACTED]

[REDACTED]. (*Id.* at Q&A 52; CDX-0019 at Slide 19; *see also* Tr. (Lee) at 534:18-22, 535:9-20, 529:7-10, 529:24-530:2, 537:4-8; 540:3-14; CX-0690C at 226:5-8, 231:5-10, 234:12-19, 229:14-17, 230:17-18, 231:2-4, 235:4-8; (CX-0689C at 100:14-16 (regarding [REDACTED])), 144:6-8, 119:19-120:1, 145:4-9, 129:16-130:13; CX-0039C at MI3D_ITC_000009-11; CX-0143C at MI3D_ITC_938319; CX-0146C at MI3D_ITC_938640; CX-0148C at MI3D_ITC_938686.)

Therefore, the ALJ finds that RealD has shown by a preponderance of the evidence that 3D, 3D S, and [REDACTED] infringe claim 11 of the '934 patent.

II. VALIDITY

A. Burden of Proof

One cannot be held liable for practicing an invalid patent claim. *See Pandrol USA, LP v. AirBoss Railway Prods., Inc.*, 320 F.3d 1354, 1365 (Fed. Cir. 2003). However, the claims of a patent are presumed to be valid. 35 U.S.C. § 282; *DMI Inc. v. Deere & Co.*, 802 F.2d 421 (Fed. Cir. 1986). Although a complainant has the burden of proving a violation of section 337, it can rely on this presumption of validity.

Respondents have the burden of proving invalidity of the patent. This “burden is constant and never changes and is to convince the court of invalidity by clear evidence.” *i4i v. Microsoft Corp.*, 131 S. Ct. 2338, 2243 (2010) (citing Judge Rich in *American Hoist & Derrick Co. v. Sowa & Sons, Inc.*, 725 F. 2d 1350, 1360 (CA Fed. 1984)). Respondents’ burden of

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persuasion *never shifts*. *Id.* The risk of “decisional uncertainty” remains on the respondent. *Technology Licensing Corp. v. Videotek, Inc.*, 545 F.3d 1316, 1327 (Fed. Cir. 2008); *see also PowerOasis, Inc. v. T-Mobile USA, Inc.*, 522 F.3d 1299, 1303, 1305 (Fed. Cir. 2008); *Pfizer, Inc. v. Apotex, Inc.*, 480 F.3d 1348, 1360 (Fed. Cir. 2007). Thus, it is Respondent’s burden to prove by clear and convincing evidence that any of the alleged prior art references anticipate or render obvious the asserted claims of the patents in suit. Failure to do so means that Respondents lose on this point. *Id.* (stating, “[I]f the fact trier of the issue is left uncertain, the party with the burden [of persuasion] loses.”).

Respondents also bear the burden of going forward with evidence, *i.e.*, the burden of production. *Id.* This is “a shifting burden the allocation of which depends on where in the process of a trial the issue arises.” *Id.* However, this burden does not shift until a respondent presents “evidence that might lead to a conclusion of invalidity.” *Pfizer*, 480 F.3d at 1360. Once a respondent “has presented a prima facie case of invalidity, the patentee has the burden of going forward with rebuttal evidence.” *Id.*

B. 35 U.S.C. § 112: Indefiniteness and Written Description

The definiteness requirement of 35 U.S.C. § 112 ensures that the patent claims particularly point out and distinctly claim the subject matter that the patentee regards to be the invention. *See* 35 U.S.C. § 112(b); *Metabolite Labs., Inc. v. Lab. Corp. of Am. Holdings*, 370 F.3d 1354, 1366 (Fed. Cir. 2004). If a claim’s legal scope is not clear enough so that a person of ordinary skill in the art could determine whether or not a particular product infringes, the claim is indefinite, and is, therefore, invalid. *Geneva Pharm., Inc. v. GlaxoSmithKline PLC*, 349 F.3d 1373, 1384 (Fed. Cir. 2003). “The fact that [a patentee] can articulate a definition supported by the specification ... does not end the inquiry. Even if a claim term's definition can be reduced to

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words, the claim is still indefinite if a person of ordinary skill in the art cannot translate the definition into meaningfully precise claim scope.” *Halliburton Energy Servs., Inc. v. M-I LLC*, 514 F.3d 1244, 1251 (Fed. Cir. 2008).

Thus, it has been found that:

When a proposed construction requires that an artisan make a separate infringement determination for every set of circumstances in which the composition may be used, and when such determinations are likely to result in differing outcomes (sometimes infringing and sometimes not), that construction is likely to be indefinite.

Halliburton Energy Servs., 514 F.3d at 1255.

“[B]ecause claim construction frequently poses difficult questions over which reasonable minds may disagree, proof of indefiniteness must meet ‘an exacting standard.’” *Wellman, Inc. v. Eastman Chemical Co.*, 642 F.3d, 1355, 1366 (Fed. Cir. 2011) (citations omitted). “An accused infringer must ... demonstrate by clear and convincing evidence that one of ordinary skill in the relevant art could not discern the boundaries of the claim based on the claim language, the specification, the prosecution history, and the knowledge in the relevant art.” *Id*

In addition, the first paragraph of 35 U.S.C. § 112 requires:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art ... to make and use the same ...

(35 U.S.C. § 112.)

The Federal Circuit has interpreted 35 U.S.C. § 112, ¶ 1, to include a written description requirement that requires a patent specification reasonably convey “to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date.” *Ariad Pharm., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010). “Compliance with the written description requirement is a question of fact.” *ICU Med., Inc. v. Alaris Med. Sys., Inc.*, 558 F.3d

1368, 1376 (Fed. Cir. 2009). Terms need not be used *in haec verba*, *Eiselstein v. Frank*, 52 F.3d 1035, 1038 (Fed. Cir. 1995), and the requirement can be satisfied by “words, structures, figures, diagrams, formulas, etc.,” *Lockwood v. Am. Airlines, Inc.*, 107 F.3d 1565, 1572 (Fed. Cir. 1997). A description that merely renders the claimed subject matter obvious, however, does not satisfy the requirement. *Id.* at 1571-72.

1. '455 Patent: Written Description under 35 U.S.C. § 112 ¶ 1

MasterImage contends that “[i]n Asserted Claims 1, 3, 9-11, 15, 17, 19 and 21 of the ‘455 patent, the claimed apparatus for projecting stereoscopic images does not include a ‘retarder’ or a ‘half wave retarder’ or any other element for rotating the polarization state of the light on one path to match the polarization state of the light on the other path.” (RIB at 115.) Thus, MasterImage argues that the “retarder-less” claims are invalid under 35 U.S.C. § 112 ¶ 1 for failing to satisfy the written description requirement. (*Id.*) MasterImage submits that the written description requirement is not met because a POSITA reading the patent’s disclosure would not have understood the patentees to have invented a system that did not include a retarder as an essential element. (*Id.*) MasterImage contends that “[t]here is nothing – absolutely nothing – in the patent’s disclosure to suggest that the inventors had possession of a polarization conversion system that eliminated a retarder for rotating the polarization state of the light on one path to match the polarization state of the light on the other path.” (*Id.*) MasterImage argues, on the contrary, the patent’s disclosure affirmatively states that a retarder is “required” or a “must” to rotate the polarization state of the light on one path to match the polarization state of the light on the other path. (*Id.*)

In response, RealD contends that MasterImage has failed to establish by clear and convincing evidence that the inventors did not describe the claimed invention so that a POSITA

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can recognize what is claimed so as to invalidate any claims under 35 U.S.C. § 112 ¶ 1. (CRB at 105.) RealD argues that “[t]he disclosures of the specification and the originally filed claims of the ’455 Patent, Mr. Lipton’s hearing testimony, and Dr. Hesselink’s testimony conclusively establish that the requisite description was provided.” (*Id.*)

The ALJ finds that the “retarder-less” claims are not invalid under 35 U.S.C. §112 ¶ 1 for failing to satisfy the written description requirement. The specification, along with the originally filed claims, adequately disclose that the claimed apparatus for projecting stereoscopic images does not include a ‘retarder’ or a ‘half wave retarder’ or any other element for rotating the polarization state of the light on one path to match the polarization state of the light on the other path. First, the ’455 Abstract discloses that a retarder may be used and not that it must be used. (JX-0001 Abstract (“A polarization modulator may be included within the secondary path, **a retarder may be used**, and optional devices that may be successfully employed in the system include elements to substantially optically superimpose light energy transmission between paths and cleanup polarizers.” (emphasis added)).) Next, the specification also discloses that the claimed apparatus for projecting stereoscopic images does not need to include a “retarder” or a “half wave retarder” as shown in the following specification excerpt:

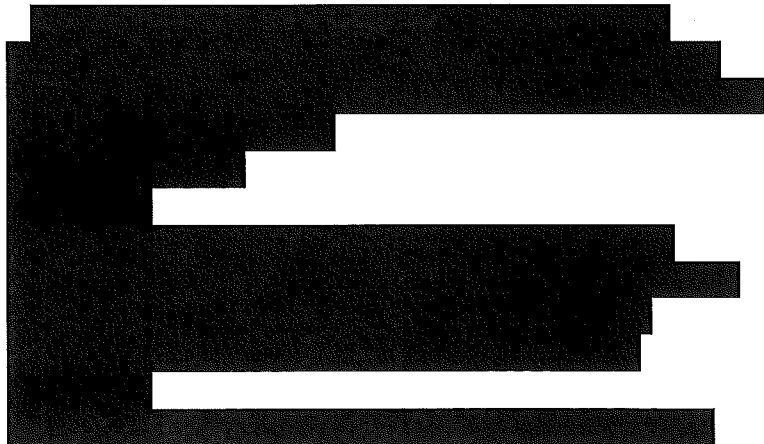
According to a second aspect of the present design, there is provided a method of projecting stereoscopic images. The method comprises receiving image light energy, splitting the image light energy received into a primary path of light energy transmitted along a primary path and a secondary path of light energy transmitted along a secondary path. The method also comprises receiving secondary path light energy and directing reflected secondary path light energy toward a surface and modulating the primary path of light energy into primary path modulated light energy, and transmitting primary path modulated light energy toward the surface.

(JX-0001 at 2:3-14.) Additionally, the record shows under the “Summary of the Invention” section that “[a] **retarder** and a secondary polarization modulator **may be employed ...**” (JX-0001 at 1:60-61 (emphases added).)

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The ALJ finds that MasterImages invalidity arguments are unpersuasive and do not prove by clear and convincing evidence that the “retarder-less” claims are invalid under 35 U.S.C. §112 ¶ 1 for failing to satisfy the written description requirement. First, MasterImage’s argument based on the ’455 patent at 5:35-56 is not persuasive because this excerpt only addresses one embodiment of the invention and does not eliminate the disclosures from other embodiments such as those discussed above. (See JX-0001 at 1:60-61 and 2:3-14.) Additionally, the specification (*i.e.*, ’455 patent at 5:35-56) specifically states that rotation can be achieved by retarders or other components further showing that a retarder is not specifically required. (See ’455 patent at 5:36-41 (“As employed herein, to clarify any issues regarding nomenclature, a beam designated as P or S indicates that beam comes from a splitter in that form, and thus while the beam **may be altered in form by retarders or other components**, the beam originally was either transmitted or reflected in the format identified.”) (emphasis added).)

Next, the ALJ finds that MasterImage’s argument based on the email from Jerry Carollo (RX-0086C) is not sufficient to overcome the disclosure in the Abstract and the specification (JX-0001 at 2:3-14) to make it necessary for the ’455 patent to require a retarder. Additionally, the record shows that Mr. Cowan, one of the other inventors of the ’455 patent, testified as to the confusion with respect to Mr. Carollo’s email.



[REDACTED]

(Hearing Tr. Vol. 3 at 676:8-677:9 (emphasis added).) In addition to Mr. Carollo’s possible confusion in view of Mr. Cowan’s testimony, the ALJ finds that Mr. Carollo’s email is extrinsic evidence and not dispositive—the email itself only provides [REDACTED]

[REDACTED]

[REDACTED] (See RX-0086C.)

Overall, the ALJ finds that MasterImage arguments do not provide clear and convincing evidence in order to overcome the presumption of validity in the face of the disclosures in the specification supporting the retarder-less claims.

Accordingly, asserted claims 1, 3, 9-11, 15, 17, 19 and 21 are not invalid under 35 U.S.C. §112 ¶ 1 for failing to satisfy the written description requirement.

2. ’455 Patent: 35 U.S.C. § 112 ¶ 2 “Uniformly Modulate”

As explained *supra* in Section IV.B.5, the ALJ found that the claim term “uniformly modulate” is not indefinite and that the term means “operating on substantially all input light to substantially change it from one polarization state to another polarization state.”

C. Anticipation

A patent may be found invalid as anticipated under 35 U.S.C. § 102(a) if “(1) the claimed invention was patented, described in a printed publication, or in public use, on sale, or otherwise available to the public before the effective filing date of the claimed invention; or (2) the claimed invention was described in a patent issued under section 151, or in an application for patent published or deemed published under section 122(b), in which the patent or application, as the case may be, names another inventor and was effectively filed before the effective filing date of the claimed invention. 35 U.S.C. § 102(a). Pursuant to 35 U.S.C. § 102(b),

(1) Disclosures made 1 year or less before the effective filing date of the claimed invention.--A disclosure made 1 year or less before the effective filing date of a claimed invention shall not be prior art to the claimed invention under subsection (a)(1) if--

(A) the disclosure was made by the inventor or joint inventor or by another who obtained the subject matter disclosed directly or indirectly from the inventor or a joint inventor; or

(B) the subject matter disclosed had, before such disclosure, been publicly disclosed by the inventor or a joint inventor or another who obtained the subject matter disclosed directly or indirectly from the inventor or a joint inventor.

(2) Disclosures appearing in applications and patents.--A disclosure shall not be prior art to a claimed invention under subsection (a)(2) if--

(A) the subject matter disclosed was obtained directly or indirectly from the inventor or a joint inventor;

(B) the subject matter disclosed had, before such subject matter was effectively filed under subsection (a)(2), been publicly disclosed by the inventor or a joint inventor or another who obtained the subject matter disclosed directly or indirectly from the inventor or a joint inventor; or

(C) the subject matter disclosed and the claimed invention, not later than the effective filing date of the claimed invention, were owned by the same person or subject to an obligation of assignment to the same person

35 U.S.C. § 102(b).

A patent may be found invalid under 35 U.S.C. § 102(e) if the invention was described in (1) an application for patent ... by another filed in the U.S. before the invention by the applicant for patent ... or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, ...” 35 U.S.C. § 102(e) (2002) (“Pre-AIA

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§ 102(e)"); *Spansion, Inc. v. United States ITC*, 629 F.3d 1331, 1356 (Fed. Cir. 2010). Under § 102(e), a claim is anticipated when “the four corners of a single, prior art document describe every element of the claimed invention, either expressly or inherently, such that a person of ordinary skill in the art could practice the invention without undue experimentation.” *Id.*

A patent may be found invalid under 35 U.S.C. § 102(g) if “(2) before such person's invention thereof, the invention was made in this country by another inventor who had not abandoned, suppressed, or concealed it.” 35 U.S.C. §102(g)(2). Under 35 U.S.C. § 102(g), the first party to reduce the invention to practice ordinarily receives priority; however, if a second party can show that it was the first to conceive the invention and that it exercised reasonable diligence in later reducing that invention to practice then the second party will receive priority. *Brown v. Barbacid*, 276 F.3d 1327, 1337 (Fed. Cir. 2002); *Cooper v. Goldfarb*, 154 F.3d 1321, 1327 (Fed. Cir. 1998); *Mahurkar v. C.R. Bard, Inc.*, 79 F.3d 1572, 1577 (Fed. Cir. 1996). To establish a priority claim, the second party must corroborate conception, the exercise of reasonable diligence, and the reduction to practice with something more than inventor testimony. *Mahurkar*, 79 F.3d at 1577; *Price v. Symsek*, 988 F.2d 1187, 1194 (Fed. Cir. 1993). The sufficiency of corroboration is analyzed under a “rule of reason” test, with each piece of pertinent evidence being examined to determine the credibility of the inventor’s testimony. *Medichem, S.A. v. Rolabo, S.L.*, 437 F.3d 1157, 1170 (Fed. Cir. 2006). Numerous factors may be considered when evaluating the sufficiency of corroboration of inventor testimony, including the length of time that has passed and the interests of the witness. *Price*, 988 F.2d at 1194.

In addition to establishing conception, a party claiming priority must also establish reasonable diligence from a time prior to conception by the other party to the date of reduction to practice—the critical period. *Brown*, 276 F.3d at 1337; *Cooper*, 154 F.3d at 1327; *Mahurkar*, 79

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F.3d at 1577. “The law requires only reasonable (and not heroic) diligence.”; *Stambicarbon Bv v. Sepracor, Inc.*, No. 97-8-GMS, 2001 U.S. Dist. LEXIS 9061, at *23 (D. Del. March 12, 2001). Diligence may be shown by the activities of non-inventors during the critical period. *De Solms v. Schoenwald*, 15 U.S.P.Q.2D (BNA) 1507, 1511 (Bd. Pat. App. & Int’f 1990). Diligence does not require the most expeditious course “so long as there was diligent activity toward the end in view.” *Id.* Reasonable diligence may still be found despite small gaps in activity. *Brown*, 436 F.3d at 1383; *Tyco Healthcare Grp. LP v. Ethicon Endo-Surgery, Inc.*, 774 F.3d 968, 975 (Fed. Cir. 2014), *pet. for cert. filed* July 25, 2015 (on related, but not dispositive grounds).

The diligence analysis is factual in nature. *Brown*, 436 F.3d at 1380; *see Mahurkar*, 79 F.3d at 1578-79; *In re Jolley*, 308 F.3d 1317, 1326-27 (Fed. Cir. 2002) (showing diligence by documenting various activities by both inventors, which included buying initial samples and glassware needed for experimentation, conducting initial tests of product, and ordering more supplies when initial supply was exhausted); *Scott v. Koyama*, 281 F.3d 1243, 1247-49 (Fed. Cir. 2002). And diligence may also be shown by a patent attorney preparing and filing the patent application. *Bey v. Kollonitsch*, 806 F.2d 1024, 1027 (Fed. Cir. 1986). Further, diligent efforts in the actual reduction to practice of the invention may be combined with diligent efforts to prepare the patent application. *C.f. Scott*, 281 F.3d at 1248-49.

Anticipation is a question of fact. *Texas Instruments, Inc. v. U.S. Int’l Trade Comm’n*, 988 F.2d 1165, 1177 (Fed. Cir. 1993) (“*Texas Instruments IP*”). Anticipation is a two-step inquiry: first, the claims of the asserted patent must be properly construed, and then the construed claims must be compared to the alleged prior art reference. *See, e.g., Medichem, S.A. v. Rolabo, S.L.*, 353 F.3d 928, 933 (Fed. Cir. 2003). It is axiomatic that claims are construed the

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same way for both invalidity and infringement. *W.L. Gore v. Garlock, Inc.*, 842 F.2d 1275, 1279 (Fed. Cir. 2008.)

“Claimed subject matter is ‘anticipated’ when it is not new; that is, when it was previously known. Invalidation on this ground requires that *every element and limitation* of the claim was *previously described in a single prior art reference*, either *expressly or inherently*, so as to place a person of ordinary skill in possession of the invention.” *Sanofi-Synthelabo v. Apotex, Inc.*, 550 F.3d 1075, 1082 (Fed. Cir. 2008) (emphasis added) (citing *Schering Corp. v. Geneva Pharms., Inc.*, 339 F.3d 1373, 1379 (Fed. Cir. 2003) and *Continental Can Co. USA v. Monsanto Co.*, 948 F.2d 1264, 1267-69 (Fed. Cir. 1991)).

To anticipate, a single prior art reference must be enabling and it must describe the claimed invention, *i.e.*, a person of ordinary skill in the field of the invention must be able to practice the subject matter of the patent based on the prior art reference without undue experimentation. *Sanofi*, 550 F.3d at 1082. The presence in said reference of *both* a specific description and enablement of the subject matter at issue are required. *Id.* at 1083.

To anticipate, a prior art reference also must disclose all elements of the claim within the four corners of said reference. *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1369 (Fed. Cir. 2008); *see also Abbott Labs. v. Sandoz, Inc.*, 544 F.3d 1341, 1345 (Fed. Cir. 2007) (stating, “Anticipation is established by documentary evidence, and requires that every claim element and limitation is set forth in a single prior art reference, in the same form and order as in the claim.”). Further, “[b]ecause the hallmark of anticipation is prior invention, the prior art reference—in order to anticipate under 35 U.S.C. § 102—must not only disclose all elements of the claim within the four corners of the document, but must also disclose those elements ‘arranged as in

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the claim.” *Id.* (quoting *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 1548 (Fed. Cir. 1983)). The Federal Circuit explained this requirement as follows:

The meaning of the expression ‘arranged as in the claim’ is readily understood in relation to claims drawn to things such as ingredients mixed in some claimed order. In such instances, a reference that discloses all of the claimed ingredients, but not in the order claimed, would not anticipate, because the reference would be missing any disclosure of the limitations of the claimed invention ‘arranged as in the claim.’ But the ‘arranged as in the claim’ requirement is not limited to such a narrow set of ‘order of limitations’ claims. Rather, *our precedent informs that the ‘arranged as in the claim’ requirement applies to all claims and refers to the need for an anticipatory reference to show all of the limitations of the claims arranged or combined in the same way as recited in the claims, not merely in a particular order.* The test is thus more accurately understood to mean ‘arranged or combined in the same way as in the claim.’

Id. at 1370 (emphasis added). Therefore, it is not enough for anticipation that a prior art reference simply contains all of the separate elements of the claimed invention. *Id.* at 1370-71 (stating that “*it is not enough [for anticipation] that the prior art reference discloses part of the claimed invention, which an ordinary artisan might supplement to make the whole, or that it includes multiple, distinct teachings that the artisan might somehow combine to achieve the claimed invention.*” (emphasis added)). Those elements must be arranged or combined in said reference in the same way as they are in the patent claim.

If a prior art reference does not expressly set forth a particular claim element, it still may anticipate the claim if the missing element is inherently disclosed by said reference. *Trintec Indus., Inc. v. Top-U.S.A. Corp.*, 295 F.3d 1292, 1295 (Fed. Cir. 2002); *In re Robertson*, 169 F.3d 743, 745 (Fed. Cir. 1999). Inherent anticipation occurs when “the missing descriptive material is ‘necessarily present,’ not merely probably or possibly present, in the prior art.” *Id.* In other words, inherency may not be established by probabilities or possibilities. *See Continental*

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Can, 948 F.2d at 1268. Thus, “[t]he mere fact that a certain thing may result from a given set of circumstances is not sufficient.” *Id.*

The critical question for inherent anticipation here is whether, as a matter of fact, practicing an alleged prior art reference necessarily features or results in each and every limitation of the asserted claim at issue. *See, e.g., Toro Co. v. Deere & Co.*, 355 F.3d 1313, 1320 (Fed. Cir. 2004).

If there are “slight differences” between separate elements disclosed in a prior art reference and the claimed invention, those differences “invoke the question of obviousness, not anticipation.” *NetMoneyIN*, 545 F.3d at 1071; *see also Trintec*, 295 F.3d at 1296 (finding no anticipation and stating that “the difference between a printer and a photocopier may be minimal and obvious to those of skill in this art. Nevertheless, obviousness is not inherent anticipation.”). Statements such as “one of ordinary skill may, in reliance on the prior art, complete the work required for the invention,” and that “it is sufficient for an anticipation if the general aspects are the same and the differences in minor matters is only such as would suggest itself to one of ordinary skill in the art,” *actually relate to obviousness*, not anticipation. *Connell*, 722 F.2d at 1548.

MasterImage argues that the asserted claims of the ’455 patent are invalid under 35 U.S.C. § 102(e) and (g) and the ’934 patent is invalid under 35 U.S.C. § 102(g). For the reasons set forth below, the ALJ finds that MasterImage has failed to prove by clear and convincing evidence that the asserted claims of the ’455 patent are invalid under 35 U.S.C. § 102(e) and (g) and that the asserted claims of the ’934 patent is invalid under 35 U.S.C. § 102(g).

1. MasterImage's Arguments

MasterImage's anticipation arguments rely heavily on U.S. Patent No. 7,905,602 ("the '602 Patent") and U.S. Provisional Application No. 60/827,657 to which the '602 patent (and the '934 patent) claim priority ("Schuck or Schuck patent"). (RIB at 51-52.) Specifically, MasterImage argues that "either the Schuck patent invalidates the Asserted Claims of the '455 patent under 35 U.S.C. § 102(e), or the prior invention by the inventors of the '455 patent invalidates the Asserted Claims of the '934 patent under 35 U.S.C. § 102(g)." (RIB at 52.)

RealD argues that MasterImage has failed to take a final position on the validity of either the '455 patent or the '934 patent by arguing that whichever patent has priority, the other is invalid. (CRB at 57.) RealD argues that this sort of conditional argument cannot satisfy the clear and convincing standard. (CRB at 57.) RealD further notes that the PTO considered the asserted claims of both patents relative to the other and found all of the asserted claims patentable and not "interfering," *i.e.*, both the '455 patent and the '934 patent were issued by their respective examiners with each having full knowledge of the other. (CRB at 58-59.)

Nevertheless, as noted by RealD, the examiners for each of the patent, *i.e.*, the '455 and the '934 patents, were aware of the existence and the subject matter of the other and determined that they were not "interfering." (Tr., 843:8-16; JX-0005 at REALD_ITC000087; JX-0006 at REALD_ITC00004351; JX-0008 at REALD_ITC0000911.) Both patents were issued even with the knowledge of the other. (JX-0005 at REALD_ITC000120; JX-0006 at REALD_ITC0000441; JX-0008 at REALD_ITC0001026.) Thus, given that the PTO already considered these patents as prior art references to each other, MasterImage faces a particularly high burden of proving invalidity. *See Impax Labs., Inc. v. Aventis Pharm., Inc.*, 468 F.3d 1366, 1378 (Fed. Cir. 2006) ("When the prior art was before the examiner during prosecution of the

application, there is a particularly heavy burden in establishing invalidity.”). As set forth below, the ALJ finds that MasterImage has failed to meet that burden.

2. '455 Patent: 35 U.S.C. § 102(e)

MasterImage contends that all the asserted claims of the '455 patent are *prima facie* invalid under 35 U.S.C. § 102(e) in view of the U.S. Patent No. 7,905,602 (“the '602 patent”) based on the common subject matter disclosed in the '602 patent and U.S. Provisional Application No. 60/827,657 (“the '657 provisional application”) filed on September 29, 2006 to which the '602 patent claims priority (“Schuck” or Schuck patent”). (RIB at 51-52.) MasterImage submits that the Schuck patent claims priority from the '657 provisional application and to the extent the Schuck patent carries forward the disclosure of the '657 provisional application, the effective filing date of the Schuck patent as a prior art reference to the '455 patent under 35 U.S.C. § 102(e) is September 29, 2006, which is before the October 18, 2006 filing date of the '455 patent. (*Id.* at 75-76.) Specifically, MasterImage contends that RealD does not substantively challenge that each of claims 1-3, 10, 11, 13, 14, 17-19 and 21 of the '455 patent is *prima facie* invalid under §102(e) based on the Schuck patent. (*Id.* at 76.) MasterImage submits that “[i]nstead, the only reason given by RealD’s expert, Dr. Hesselink, as to why the Asserted Claims of the '455 patent are valid relative to the Schuck patent is his opinion that the inventions of the '455 patent Asserted Claims were conceived before the earliest effective filing date of the Schuck patent and that such '455 patent inventions were diligently reduced to practice during the relevant time period.” (*Id.*)

In response, ReadD contends that it has proved an earlier date of invention than the Schuck patent by the '455 patent inventors with respect to the asserted claims of the '455 patent. (CRB at 75.) RealD argues that the inventions of the asserted claims of the '455 patent were

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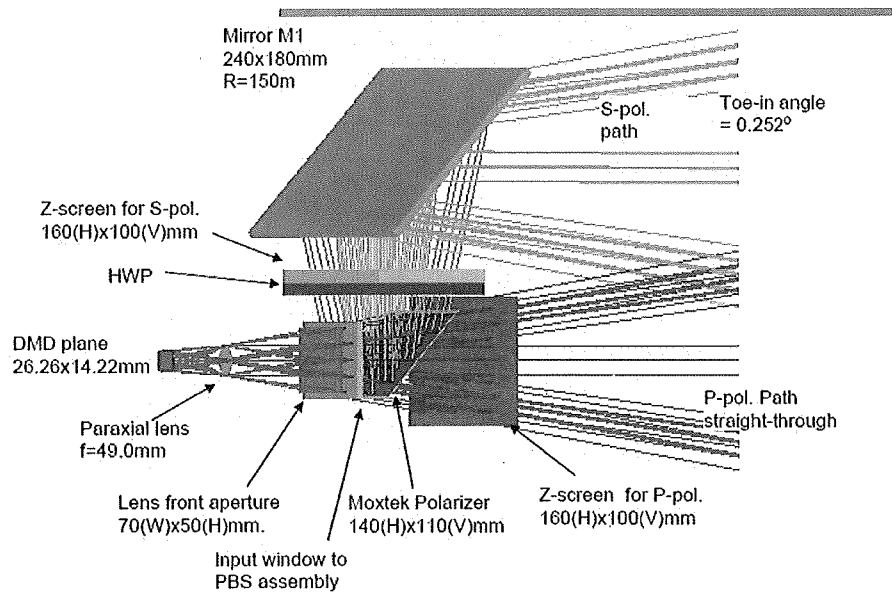
conceived prior to both the earliest priority date of the Schuck patent, September 29, 2006, and the Sept. 28, 2006 disclosure document prepared by Drs. Schuck and Robinson. (CIB at 63-64.) Specifically, RealD points out that the Final Design Doc. of Sept. 22, 2006 (CX-1299C), confirmed by metadata analysis and supported by both inventor and third-party testimony, shows that the '455 patent inventor disclosed to others his completed thought expressed in such clear terms as to enable those skilled in the art to make the invention prior to Sept. 28/29, 2006. (*Id.* at 64.) Additionally, RealD submits that the invention encompassed by the '455 patent was diligently reduced to practice starting at least by September 22, 2006 until the constructive reduction to practice on October 18, 2006. (*Id.*)

Further, RealD argues that MasterImage “provides no claim analysis or discussion under Sections 102(e), 102(g), or 103 and instead baldly asserts that ‘(e)ach limitation of each of claims 1-3, 10, 11, 13, 14, 17-19 and 21 of the '455 patent is met by a corresponding disclosure in each of the Schuck patent and the ‘657 Provisional Application’ or ‘by the invention disclosed in the September 28, 2006 Disclosure Document,’ and cites to its expert’s witness statement.” (CRB at 76.) Thus, RealD contends that MasterImage’s conclusory assertions cannot meet the clear and convincing standard for proving patent invalidity. (*Id.*)

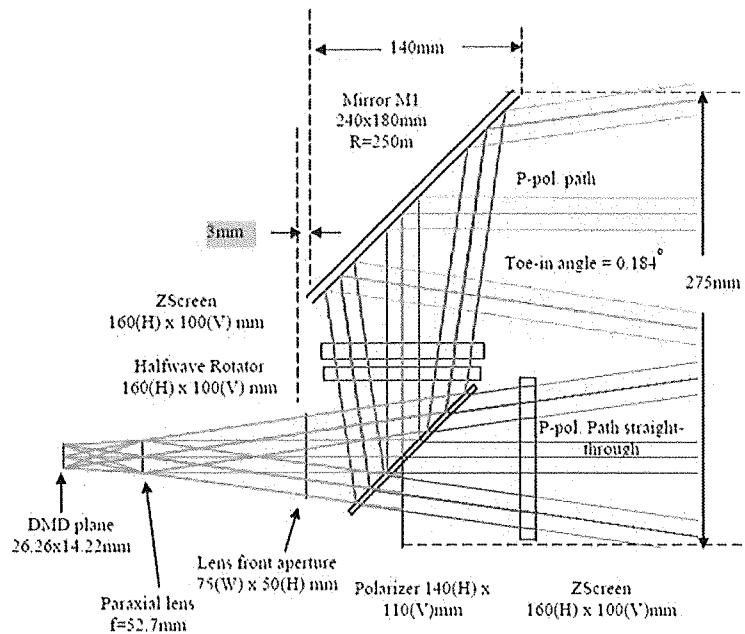
The ALJ finds that the Schuck patent is not prior art to the '455 patent and, therefore, the '455 patent is not invalid under 35 U.S.C. § 102(e). The record shows that the inventions of the asserted claims of the '455 patent were conceived prior to both the earliest priority date of the Schuck patent, September 29, 2006, and the September 28, 2006 disclosure document prepared by Drs. Schuck and Robinson. The invention encompassed by the '455 patent was diligently reduced to practice starting at least by September 22, 2006 until the constructive reduction to practice on October 18, 2006. Specifically, the record shows that the Final Design Document of

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September 22, 2006 (CX-1299C), confirmed by metadata analysis and supported by both inventor and third-party testimony, shows that the '455 patent inventors disclosed to others their completed thought expressed in such clear terms as to enable those skilled in the art to make the invention" prior to Sept. 28/29, 2006. (See CX-1299C (CDS PBS Final Design Review, dated September 22, 2006).) The record also shows that the Final Design Doc. of Sept. 22, 2006 was received on Sept. 25, 2006. (See CX-1027RC (Cowan Rebuttal Witness Statement) at Q/A 20.) Additionally, the record shows that the Final Document of September 22, 2006 contained specific details for the '455 inventions as shown for example in the figure below. (See CX-1027RC (Cowan Rebuttal Witness Statement) at Q/A 21; see also CX-1299C at 17.)



(CX-1299C at 17.) Furthermore, the record shows that the system illustrated in Figure 4 (see below) of the Final Feasibility Report (see CX-1087C at 5) closely aligns with that found in Figure 3 of the '455 patent. (See CX-1550C (Hesslink Rebuttal Witness Statement) at Q/A 134.)



(CX-1087C at 5.)

Further, the record shows that the '455 patent inventors practiced reasonable diligence from at least September 22, 2006 until constructive reduction to practice on October 18, 2006. First, the record shows that after the presentation of the Final Design Doc., on September 25, 2006, the '455 patent inventors continued implementing the prototype design by identifying the appropriate lenses, optical components, and projector elements. (CX-1027RC (Cowan Rebuttal Witness Statement) at Q/A 23-26.) The record shows that lenses for the prototype design arrived on October 3, 2006 after a small delay. (*Id.* at Q/A 32.) In conjunction with continuing to work towards a prototype, preparation of the '455 patent application began on October 5 and 6, 2006 with the inventors providing patent attorney, Steve Smyrski, with a copy of the Final Design Doc. of September 22, 2006, and meeting with Mr. Smyrski to discuss the application. (*Id.* at Q/A 39-40.) Finally, the record shows continuous activity to complete and file the patent application occurred between Friday, October 6, 2006 and the filing date of October 18, 2006. (*Id.* at Q/A 45-46.)

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However, even if the Schuck patent was prior art to the asserted claims of the '455 patent, the ALJ finds that MasterImage has not met its clear and convincing burden under 35 U.S.C. § 102(e) because MasterImage did not provide a claim analysis or discussion under § 102(e), but only provided a conclusory statement that “(e)ach limitation of each of claims 1-3, 10, 11, 13, 14, 17-19 and 21 of the '455 patent is met by a corresponding disclosure in each of the Schuck patent and the '657 Provisional Application.” (*internal quote* from RIB at 76; *citing to* RX-0558C (Brennesholtz Witness Statement) at Q/A537-542, Q/A544-546, Q/A548-555.)

Accordingly, the '455 patent is not invalid under 35 U.S.C. § 102(e) due to the Schuck patent and the '657 Provisional Application.

3. '455 Patent: 35 U.S.C. § 102(g)

MasterImage contends that claims 1-3, 10, 11, 13, 17-19, and 21 of the '455 patent are *prima facie* invalid under 35 U.S.C. § 102(g) based on the inventors of the '602 patent having made their invention in the United States before the inventors of the '455 patent filed their patent application (“Schuck invention”). (RIB at 52.) First, MasterImage points out that the September 28, 2006 Disclosure Document is an invention disclosure that became the first provisional application ('657 Provisional Application) that in turn led to the Schuck '602/'934 patents. (RIB at 77.) Next, MasterImage submits that the subject matter disclosed in the September 28, 2006 Disclosure Document was conceived of by Miller Schuck and Michael Robinson, and the document was prepared and the '657 Provisional Application was filed while inventors Schuck and Robinson were employed by ColorLink, prior to ColorLink's acquisition by RealD. (*Id.*) MasterImage then contends that “[n]ot only did the September 28, 2006 Disclosure Document become the '657 Provisional Application, the two are ‘substantively the same.’” (*Id.* at 77-78.) MasterImage argues, therefore, that the September 28, 2006 Disclosure Document unequivocally

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shows complete conception, in the United States, of the invention as reduced to practice by the filing of the '657 Provisional Application.

In response, ReadD contends that it has proved an earlier date of invention than the inventors of the '602 patent by the '455 patent inventors with respect to the asserted claims of the '455 patent. (CRB at 75.) RealD argues that the inventions of the asserted claims of the '455 patent were conceived prior to both the earliest priority date of the Schuck patent, September 29, 2006, and the Sept. 28, 2006 disclosure document prepared by Drs. Schuck and Robinson. (CIB at 63-64.) Specifically, RealD points out that the Final Design Doc. of Sept. 22, 2006 (CX-1299C), confirmed by metadata analysis and supported by both inventor and third-party testimony, shows that the '455 patent inventor disclosed to others his completed thought expressed in such clear terms as to enable those skilled in the art to make the invention prior to September 28/29, 2006. (*Id.* at 64.) Additionally, RealD submits that the invention encompassed by the '455 patent was diligently reduced to practice starting at least by September 22, 2006 until the constructive reduction to practice on October 18, 2006. (*Id.*)

Further, RealD argues that MasterImage "provides no claim analysis or discussion under Sections 102(e), 102(g), or 103 and instead baldly asserts that '(e)ach limitation of each of claims 1-3, 10, 11, 13, 14, 17-19 and 21 of the '455 patent is met by a corresponding disclosure in each of the Schuck patent and the '657 Provisional Application' or 'by the invention disclosed in the September 28, 2006 Disclosure Document,' and cites to its expert's witness statement." (CRB at 76.) Thus, RealD contends that MasterImage's conclusory assertions cannot meet the clear and convincing standard for proving patent invalidity. (*Id.*)

For the same reasons as explained *supra* in Section VI.C.2., the September 28, 2006 Disclosure Document invention disclosure that became the first provisional application ('657

Provisional Application) that in turn led to the Schuck '602/'934 patents is not prior art to the '455 patent.

However, even if the September 28, 2006 Disclosure Document invention disclosure was prior art to the asserted claims of the '455 patent, the ALJ finds that MasterImage has not met its clear and convincing burden under 35 U.S.C. § 102(g) because MasterImage did not provide a claim analysis or discussion under Section 102(g), but only provided an unsupported conclusory statement that “[e]ach of Asserted Claims 1-3, 10, 11, 13, 14, 17-19 and 21 of the '455 patent is met by the invention disclosed in the September 28, 2006 Disclosure Document, thereby rendering each of those Asserted Claims *prima facie* invalid under 35 U.S.C. §102(g).” (*Internal quote* from RIB at 78; *citing to* RX-0558C (Brennesholtz Witness Statement) at Q/A 563, Q/A537-542, Q/A544-546, Q/A548-555.)

Accordingly, the '455 patent is not invalid under 35 U.S.C. § 102(g).

4. '934 Patent: 35 U.S.C. § 102(g)

a. March 24, 2006 Drawing

MasterImage focuses the bulk of its invalidity arguments in establishing that certain drawings in March and July 2006 embody the invention of the '455 patent. (RIB at 59-70.) Specifically, MasterImage describes, in detail, how the March 24, 2006 drawing (RX-0067C) from Mr. Cowan (an inventor of the '455 patent), in combination with an email (RX-0430C.0001) and written follow-up April document (RX-0070C) from Mr. Cowan embodies Figure 6A of the '455 patent. (RIB at 60-65.) As such, MasterImage argues that the March 24, 2006 drawing is an invention that is 102(g) prior art to the '934 patent. (RIB at 65-68.)

RealD argues that MasterImage has failed to show by clear and convincing evidence that the March 24, 2006 drawing or the July 27, 2006 Final Report are 102(g) prior art. (CRB at 60-

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70.) Specifically, RealD argues that the March 24, 2006 depicts an inoperative system and, further, that the inventors did not pursue the design set forth in that drawing. (CRB at 60.)

The ALJ finds that MasterImage has failed to prove by clear and convincing evidence that the March 24, 2006 line drawing is 102(g) prior art.

The ALJ finds that MasterImage has failed to show by clear and convincing evidence that the March 24, 2006 is 102(g) prior art to claims 1, 6, and 11 of the '934 patent because (1) it depicts an inoperative system and (2) it was not diligently pursued by the inventors of the '455 patent. *Ortho-McNeil Pharmaceutical, Inc. v. Mylan Laboratories, Inc.*, 348 F.Supp.2d 713, 731 (N.D. W. Va 2004) (“Invalidity based on prior invention is a question of law that must be proven by clear and convincing evidence”) (citing *Gambro Lundia AB v. Baxter Healthcare Corp.*, 110 F.3d 1573, 1576 (Fed.Cir.1997)). Specifically, the evidence shows that [REDACTED]

[REDACTED] (CX-1550C at Q&A 108-112; CX-0730R-C at Q&A 69; CX-1031C at Q&A 69; CX-1027R-C at Q&A 53.) [REDACTED]

[REDACTED] (*Id.*) Indeed, the March 2006 drawing does not contain a detailed description of how the components operate or their properties. (RX-0067C.)

MasterImage argues that this problem could easily be corrected by replacing [REDACTED]

[REDACTED] (RIB at 67.) MasterImage argues that “Mr. Cowan had conceived of using prisms or mirrors for use in the design reflected in his line drawing to correct for unequal path length...” (RIB at 67) (emphasis original). However, the ALJ finds Mr. Cowan’s testimony as to what he may or may not have contemplated does not change the fact that [REDACTED]. Again, the focus is on

what the March drawing itself discloses and the evidence clearly shows that the March drawing discloses [REDACTED]

[REDACTED] As such, the ALJ finds that the March drawing is not the conception of the embodiment of Figure 6A of the '455 patent.

Even assuming that the March drawing was a conception of Figure 6A of the '455 patent, the evidence fails to show that the March drawing was diligently pursued by the inventors of the '455 patent. Indeed, the inventors specifically state that they did not pursue the design in the drawing. Specifically, Mr. Lipton testified that the March sketch was “one of many” sketches, that the inventors “tr[ie]d a lot of different things,” that “[t]his was one of many things” that they tried, and that he ultimately did not pursue this design. (Tr. at 268:20-24.; *see also* RX-0430C; Tr.at 650:3-12 [REDACTED]

[REDACTED]; *id.* at 654:23 [REDACTED]

[REDACTED] The ALJ finds that taken as a whole – the uncertainty around whether the sketch is an operable system combined with the lack of any evidence of the inventors diligently pursuing the March drawing – MasterImage has failed to meet the heavy burden of showing by clear and convincing evidence that the March 26, 2006 drawing is prior art under 35 U.S.C. § 102(g).

Even assuming that the March 26, 2006 drawing was 102(g) prior art, the ALJ finds further that MasterImage has failed to meet its heavy clear and convincing burden. MasterImage’s entire argument for how the March drawing discloses each and every limitation of claims 1, 6 and 11 of the '934 patent consists of the following:

The line drawing also depicts an invention which meets all the limitations of Asserted Claims of the '934 patent. Particularly, starting with preamble of claim 1, the line drawing discloses “A stereoscopic system” as the system as illustrated is intended to receive stereoscopic images through the projection lens depicted in

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the drawing by the elliptical structure at the bottom of the drawing, and uses the ZScreens to encode the left-eye perspective and right-eye perspective images. The line drawing discloses the first element of claim 1, as the “polarizing beam splitter” in the drawing which corresponds to the claimed “a polarization beam splitter (PBS) operable to direct first light bundles having a first state of polarization (SOP) along a first light path, and direct second light bundles having a second SOP along a second light path.” The line drawing discloses the second element of claim 1, as the “achromatic half wave” plate in the drawing corresponds to “a polarization rotator located on the second light path, the polarization rotator being operable to translate the second SOP to the first SOP.” The line drawing discloses the third element of claim 1, as the two “ZScreens” in the drawing which correspond to “a polarization switch subsystem operable to receive first and second light bundles from the first and second light paths respectively, and to selectively translate both the polarization states of the first and second light bundles to one of a first output SOP and a second output SOP.” *See* JX-0004, claim 1.

The line drawing discloses the element added by claim 6, as the ZScreens which constitute “the polarization switch subsystem,” which “selects between the first and the second output SOP [right/left handed circular output] in synchronization with transmission of an image frame by a projector.” *See* JX-0004, claim 6. Finally, the line drawing also discloses two ZScreens (one in the transmitted path and one in the reflected path) rather than one large ZScreen and thus also meets the requirements of claim 11, namely, “wherein the polarization switch subsystem comprises first and second polarization switch panels, the first polarization switch panel receiving light from the first light path, and the second polarization switch panel receiving light from the second light path.” *See* JX-0004, claim 11.

(RIB at 66-67; *see also* RIB at 71-72 (conclusorily stating that the March drawing meets all of the limitations of claims 1, 6 and 11 of the '934 patent.) The ALJ finds such a conclusory analysis fails to meet the clear and convincing standard. Simply listing each of the limitations of the asserted claims of the '934 patent with its allegedly corresponding part in the prior art, without any citations to evidence or testimony to support its arguments, undoubtedly fails. The citations to evidence detailed in the previous section of MasterImage's brief (RIB at 60-65) were focused on how the March 2006 corresponds to the '455 patent. There is no detailed discussion or analysis or any citations to evidence as to how the March drawing discloses each and every limitation of claims 1, 6 and 11 of the '934 patent. Thus, the ALJ finds that even if the March

drawing were considered 102(g) prior art, MasterImage's conclusory arguments, without evidentiary citations, still fail to meet the particularly heavy burden of clear and convincing evidence of invalidity under anticipation.

b. July 27, 2006 Final Report

MasterImage further argues that a July 27, 2006 Final Report discloses the embodiment of Figure 3 of the '455 patent. (RIB at 68-69.) MasterImage argues that the inventors of the '455 patent were reasonably diligent in their efforts to build a prototype of Figure 3 of the '455 patent and to prepare and file their patent application for that patent during the critical period. (RIB at 69-70.) As such, MasterImage argues that the July 27, 2006 Final Report is prior art under 102(g). (RIB at 70.)

RealD does not dispute that the July 27, 2006 Final Report is 102(g) prior art, but disputes that the Final Report discloses the polarization switch subsystem disclosed in the '934 Patent. (CRB at 73-75.)

The ALJ finds that the July 27, 2006 Final Report is 102(g) prior art. RealD concedes that "[t]he July 27, 2006 document is a drawing showing the development of an embodiment (the Figure 3 embodiment) of the '455 Patent." (CIB at 139.) The evidence shows that inventors diligently reduced to practice Figure 4 of the Final Report through attempts at building a prototype and preparing and filing the patent application. (CX-1027RC at Q&A 15-46.)

However, the ALJ finds that MasterImage has failed to show by clear and convincing evidence that the Final Report discloses each and every element of claims 1, 6 and 11 of the '934 patent. Specifically, the ALJ finds that the Final Report fails to disclose the polarization switch subsystem that has the specific output requirement called for by the claims. The asserted claims require a polarization switch subsystem that "selectively translate both the polarization states of

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the first and second light bundles to one of a first output SOP and a second output SOP.” The evidence shows that it is not clear whether the ZScreens depicted in the Final Report are operating in phase with respect to one another or out of phase with respect to one another.” (Tr. at 742:25-744:3.) Furthermore, the ALJ finds that MasterImage’s expert’s testimony also improperly relies on and references the ’455 patent application instead of focusing on the prior art reference itself, *i.e.*, the July 27, 2006 Final Report. (*See generally* RX-0588C at Q&A 612-619.)

Therefore, the ALJ finds that MasterImage has failed to show by clear and convincing evidence that the July 27, 2006 Final Report discloses each and every limitation of the asserted claims of the ’934 patent.

D. Obviousness

Included within the presumption of validity is a presumption of non-obviousness. *Structural Rubber Prods. Co. v. Park Rubber Co.*, 749 F.2d 707, 714 (Fed. Cir. 1984). Obviousness is grounded in 35 U.S.C. § 103, which provide, *inter alia*, that:

A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

35 U.S.C. § 103. Under 35 U.S.C. § 103, a patent is valid unless “the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.” 35 U.S.C. § 103. The ultimate question of obviousness is a question of law, but “it is well understood that there are factual issues

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underlying the ultimate obviousness decision.” *Richardson-Vicks Inc.*, 122 F.3d at 1479; *Wang Lab., Inc. v. Toshiba Corp.*, 993 F.2d 858, 863 (Fed. Cir. 1993).

Obviousness is a question of law based on underlying facts, as set forth in *Graham v. John Deere Co.*, 383 U.S. 1 (1966). “The Graham factors are (1) the scope and content of the prior art, (2) the difference between the prior art and the claimed invention, (3) the level of ordinary skill in the field of the invention, and (4) any relevant objective considerations.” *Soverain Software LLC v. NewEgg, Inc.*, 705 F.3d 1333, 1336 (Fed. Cir. 2013). “The Graham Court explained that ‘the ultimate question of patent validity is one of law.’” *Id.* (citing *Graham*, 383 U.S. at 17).

“Generally, a party seeking to invalidate a patent as obvious must demonstrate ‘by clear and convincing evidence that a skilled artisan would have been motivated to combine the teaching of the prior art references to achieve the claimed invention, and that the skilled artisan would have had a reasonable expectation of success in doing so.’” *OSRAM Sylvania, Inc. v. Am. Induction Techs., Inc.*, 701 F.3d 698, 706-707 (Fed. Cir. 2012) (quoting *Pfizer, Inc. v. Apotex, Inc.*, 480 F.3d 1348, 1361 (Fed. Cir. 2007)); *see also Amgen, Inc. v. F. Hoffman–LA Roche Ltd.*, 580 F.3d 1340, 1362 (Fed. Cir. 2009) (“An obviousness determination requires that a skilled artisan would have perceived a reasonable expectation of success in making the invention in light of the prior art.” (citations omitted)). “The Supreme Court has warned, however, that, while an analysis of any teaching, suggestion, or motivation to combine known elements is useful to an obviousness analysis, the overall obviousness inquiry must be expansive and flexible.” *OSRAM*, 701 F.3d at 707.

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Obviousness may be based on any of the alleged prior art references or a combination of the same, and what a person of ordinary skill in the art would understand based on his knowledge and said references. If all of the elements of an invention are found, then:

a proper analysis under § 103 requires, inter alia, consideration of two factors: (1) whether the prior art would have suggested to those of ordinary skill in the art that they should make the claimed composition or device, or carry out the claimed process; and (2) whether the prior art would also have revealed that in so making or carrying out, those of ordinary skill would have a reasonable expectation of success. *Both the suggestion and the reasonable expectation of success must be founded in the prior art, not in the applicant's disclosure.*

Velander v. Garner, 348 F.3d 1359, 1363 (Fed. Cir. 2003) (emphasis added) (internal citations omitted).

The critical inquiry in determining the differences between the claimed invention and the prior art is whether there is a reason to combine the prior art references. *See C.R. Bard v. M3 Sys.*, 157 F.3d 1340, 1352 (Fed. Cir. 1998). For example:

[A] patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art. Although common sense directs one to look with care at a patent application that claims as innovation the combination of two known devices according to their established functions, it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does. This is so because inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known.

KSR Int'l Co. v. Teleflex, Inc., 550 U.S. 398, 418-19 (2007) (emphasis added). The Federal Circuit case law previously required that, in order to prove obviousness, the patent challenger must demonstrate, by clear and convincing evidence, that there is a “teaching, suggestion, or motivation to combine. The Supreme Court has rejected this “rigid approach” employed by the

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Federal Circuit in *KSR Int'l Co. v. Teleflex Inc.*, 500 U.S. 398, 415 (2007). The Supreme Court stated:

When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill. *Sakraida* and *Anderson's-Black Rock* are illustrative—a court must ask whether the improvement is more than the predictable use of prior art elements according to their established function.

Following these principles may be more difficult in other cases than it is here because the claimed subject matter may involve more than the simple substitution of one known element for another or the mere application of a known technique to a piece of prior art ready for the improvement. Often, it will be necessary for a court to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue. To facilitate review, this analysis should be made explicitly. See *In re Kahn*, 441 F.3d 977, 988 (CA Fed. 2006) (“[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusions of obviousness”). As our precedents make clear, however, the analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.

[...]

The obviousness analysis cannot be confined by a formalistic conception of the words teaching, suggestion, and motivation, or by overemphasis on the importance of published articles and the explicit content of issued patents. The diversity of inventive pursuits and of modern technology counsels against limiting the analysis in this way. In many fields it may be that there is little discussion of obvious techniques or combinations, and it often may be the case that market demand, rather than scientific literature, will drive design trends. Granting patent protection to advance that would occur in the ordinary course without real innovation retards progress and may, in the case of patents combining previously known elements, deprive prior inventions of their value or utility.

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KSR, 550 U.S. at 417-419. The Federal Circuit has harmonized the *KSR* opinion with many prior circuit court opinions by holding that when a patent challenger contends that a patent is invalid for obviousness based on a combination of prior art references, “the burden falls on the patent challenger to show by clear and convincing evidence that a person of ordinary skill in the art would have had reason to attempt to make the composition or device, or carry out the claimed process, and would have had a reasonable expectation of success in doing so.” *PharmaStem Therapeutics, Inc. v. ViaCell, Inc.*, 491 F.3d 1342, 1360 (Fed. Cir. 2007)(citing *Medichem S.A. v. Rolabo S.L.*, 437 F.3d 1175, 1164 (Fed. Cir. 2006)); *Noelle v. Lederman*, 355 F.3d 1343, 1351-52 (Fed. Cir. 2004); *Brown & Williamson Tobacco Corp. v. Philip Morris, Inc.*, 229 F.3d 1120, 1121 (Fed. Cir. 2000) and *KSR*, 550 U.S. at 416 (“a combination of elements ‘must do more than yield a predictable result’; combining elements that work together ‘in an unexpected and fruitful manner’ would not have been obvious”). Further, a suggestion to combine need not be express and may come from the prior art, as filtered through the knowledge of one skilled in the art. *See Certain Lens-Fitted Film Pkgs.*, Inv. No. 337-TA-406, Order No. 141 at 6 (May 24, 2005).

“Secondary considerations,” also referred to as “objective evidence of non-obviousness,” must be considered in evaluating the obviousness of a claimed invention, but the existence of such evidence does not control the obviousness determination. *Graham*, 383 U.S. at 17-18. A court must consider all of the evidence under the *Graham* factors before reaching a decision on obviousness. *Richardson-Vicks Inc.*, 122 F.3d at 1483-84. Objective evidence of non-obviousness may include evidence of the commercial success of the invention, long felt but unsolved needs, failure of others, copying by others, teaching away, and professional acclaim. *See Perkin-Elmer Corp. v. Computervision Corp.*, 732 F.2d 888, 894 (Fed. Cir. 1984), *cert. denied*, 469 U.S. 857 (1984); *Avia Group Int’l, Inc. v. L.A. Gear California*, 853 F.2d 1557, 1564

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(Fed. Cir. 1988); *In re Hedges*, 783 F.2d 1038, 1041 (Fed. Cir. 1986); *Kloster Speedsteel AB v. Crucible Inc.*, 793 F.2d 1565 (Fed. Cir. 1986), *cert. denied*, 479 U.S. 1034 (1987). The burden of showing secondary considerations is on the patentee and, in order to accord objective evidence substantial weight, a patentee must establish a nexus between the evidence and the merits of the claimed invention; a *prima facie* case is generally set forth “when the patentee shows both that there is commercial success, and that the thing (product or method) that is commercially successful is the invention disclosed and claimed in the patent.” *In re GPAC Inc.*, 57 F.3d 1573, 1580 (Fed. Cir. 1995); *Demaco Corp. v. F. Von Langsdorff Licensing Ltd.*, 851 F.2d 1387, 1392 (Fed. Cir. 1988), *cert. denied*, 488 U.S. 956 (1988); *Certain Crystalline Cefadroxil Monohydrate*, Inv. No. 337-TA-293, Comm’n Op. (March 15, 1990). Once a patentee establishes nexus, the burden shifts back to the challenger to show that, *e.g.*, commercial success was caused by “extraneous factors other than the patented invention, such as advertising, superior workmanship, etc.” (*Id.*) at 1393.

Generally, a prior art reference that teaches away from the claimed invention does not create *prima facie* case of obviousness. *In re Gurley*, 27 F.3d 551, 553 (Fed. Cir. 1994); *Certain Rubber Antidegradants*, Inv. No. 337-TA-533 (Remand), Final ID (Dec. 3, 2008) (stating, “KSR reaffirms that obviousness is negated when the prior art teaches away from the invention.”)). However, the nature of the teaching is highly relevant. *Id.* “A reference may be said to *teach away when* a person of ordinary skill, upon reading the reference, would be *discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant.*” *Id.* (emphasis added). For example, “a reference will teach away if it suggests that the line of development flowing from the reference's disclosure is unlikely to be productive of the result sought by the applicant.” *Id.*

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The Federal Circuit has recently explained, moreover, that the obviousness inquiry requires examination of all four Graham factors. *E.g., Mintz v. Dietz & Watson, Inc.*, 679 F.3d 1372, 1375 (Fed. Cir. 2012). Indeed, courts must consider all of the Graham factors prior to reaching a conclusion with respect to obviousness. *In re Cyclobenzaprine Hydrochloride Extended-Release Capsule Patent Litig.*, 676 F.3d 1063, 1076–77 (Fed. Cir. 2012) (collecting cases). At all times, the burden is on the defendant to establish by clear and convincing evidence that the patent is obvious. *Id.* at 1077–78.

1. '455 Patent: 35 U.S.C. § 102(e)/ § 103

MasterImage argues that the asserted claims of the '455 patent are invalid for obviousness under 35 U.S.C. § 102(e)/ § 103. For the reasons set forth below, the ALJ finds that MasterImage has failed to prove by clear and convincing evidence that the asserted claims of the '455 patent are invalid for obviousness under 35 U.S.C. § 102(e)/ § 103.

MasterImage points out that claims 9 and 15 of the '455 patent respectively specify a “push-pull” modulator and “pi-cells having axes crossed and driven out of phase.” (*See* RIB at 76; *citing* JX-0001, Claims 9 and 15.) Then, MasterImage submits that these details of a ZScreen polarization modulator are admitted to be prior art by the '455 patent and as being disclosed in the Lipton '850 patent incorporated by reference into the '455 patent, which is also referenced in both the Schuck patent and the '657 Provisional Application. (*See* RIB at 76.) MasterImage thus concludes that “claims 9 and 15 of the '455 patent are met by, and are *prima facie* obvious over, the Schuck patent in combination with admitted prior and/or in combination with the Lipton '850 patent [U.S. Patent No. 4,792,850].” (*Id.*) Further, MasterImage concludes that “to the extent that any of claims 1-3, 10, 11, 13, 17-19 and 21 are not anticipated by the

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Schuck patent, they are rendered *prima facie* obvious by the Schuck patent under 35 U.S.C. § 103.” (*Id.* at 76-77.)

MasterImage also points out that “RealD’s only argument in this respect is based on Dr. Hesselink’s opinion that the Schuck patent is not prior art to the ‘455 patent Asserted Claims.” (*Id.* at 77.) Additionally, MasterImage submits that “RealD offers no challenge to this invalidity analysis based on the limitations of the ‘455 patent Asserted Claims in comparison to the *prima facie* prior art Shuck patent relied upon by MasterImage.” (*Id.*)

For the same reasons as explained *supra* in Section VI.C.1., the Schuck patent, as well as the September 28, 2006 Disclosure Document invention disclosure that became the first provisional application (‘657 Provisional Application) that in turn led to the Schuck ‘602/’934 patents, are not prior art to the ‘455 patent.

However, even if the Schuck patent as well as the September 28, 2006 Disclosure Document invention disclosure that became the first provisional application (‘657 Provisional Application) that in turn led to the Schuck ‘602/’934 patents were prior art to the asserted claims of the ‘455 patent, the ALJ finds that MasterImage has not met its clear and convincing burden under 35 U.S.C. § 102(e)/ § 103 because MasterImage did not provide an obviousness analysis, but only provided an unsupported conclusory statement that to the extent that any of claims 1-3, 10, 11, 13, 17-19 and 21 are not anticipated by the Schuck patent, they are rendered *prima facie* obvious by the Schuck patent under 35 U.S.C. §103.” (*Internal quote* from RIB at 76-77; *citing to* RX-0558C (Brennesholtz Witness Statement) at Q/A 533.)

Accordingly, the ‘455 patent is not invalid under 35 U.S.C. § 102(e)/ § 103.

2. '455 Patent: 35 U.S.C. § 103

MasterImage submits that U.S. Patent No. 4,792,850 (“the Lipton ’850 patent”) describes the polarization modulator which came to be known as the ZScreen. (RIB at 80.) MasterImage points out that the Lipton ’850 patent is incorporated by reference into the ’455 patent and is admitted to be prior art by the ’455 patent. (*Id.*) MasterImage then states that Figure 6 of the Lipton ’850 patent (see below) shows a system layout for a video projector in which a push-pull modulator 20 (ZScreen) is mounted to the front of a projection lens 19 of a projector 18. (*Id.*)

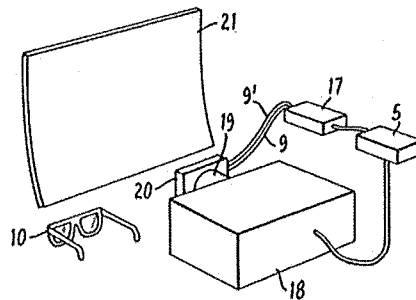
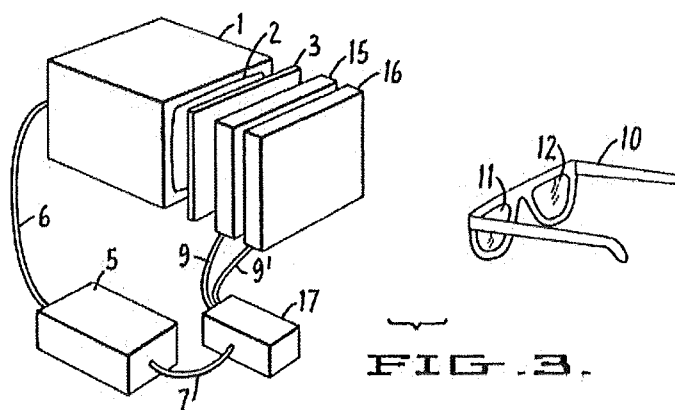


FIG. 6.

(RX-0030.0003 (Lipton ’850 Patent).) Next, MasterImage submits that the push-pull modulator 20 alternatively outputs left-handed and right-handed circularly polarized light, thereby making the images projected onto the screen 21 have the same alternate circular polarizations and the projected images are viewed with analyzing spectacles 10. (RIB at 80.)

MasterImage points out that Figure 3 of the Lipton ’850 patent (see below) shows the push-pull modulator used with a TV to provide stereoscopic images whereby the push-pull modulator is comprised of an absorptive linear polarizer 3, a first liquid crystal cell 15 and a second liquid crystal 16. (RIB at 80.)

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(RX-0030.0002 (Lipton '850 Patent).) Then, MasterImage submits that while Figure 6 uses the number "20" to identify the modulator, Figure 3 shows that the push-pull modulator is comprised of an absorptive linear polarizer 3, a first liquid crystal cell 15, and a second liquid crystal 16. (*Id.*) Additionally, MasterImage states that the liquid crystal ("LC") cells 15, 16, also known as "pi-cells", have axes which are orthogonal (crossed) relative to each other, with each axis of the LC cells arranged at a different 45° degree angle relative to the absorption axis of the linear polarizer 3. (*Id.*)

Next, MasterImage describes U.S. Patent No. 5,481,321 ("the Lipton '321 patent) as disclosing a stereoscopic film projection system used with the above-and-below film format for simultaneously projecting left perspective and right perspective images. (RIB at 81.) MasterImage then submits that the Lipton '321 patent discloses a preferred embodiment as shown in the figure below.

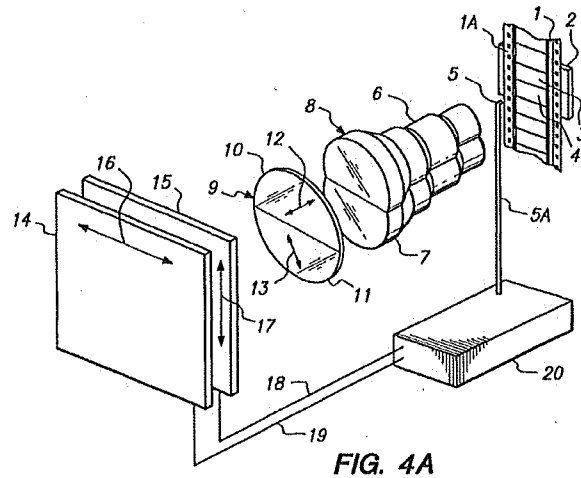


FIG. 4A

(RX-0041, Figure 4A.) MasterImage states that in Figure 4A, a light source (not shown) directs light so that it passes through an aperture plate 2, film 1, projection lens 8, sheet polarizer ensemble 9, and electro-optical polarization modulators 14, 15 onto a screen (also not shown). (RIB at 81.) Furthermore, MasterImage states that film 1 is made up of a pair (“stereopair”) of sub-frames 3, 4, with each of the pair corresponding to either a left-perspective or a right-perspective field of view. (*Id.*) MasterImage then submits that Figure 4B (see below) of the Lipton '321 patent illustrates a second embodiment of the invention whereby this embodiment differs from the embodiment shown in Figure 4A in that the Figure 4B embodiment includes two push-pull modulators rather than one. (*Id.* at 82.)

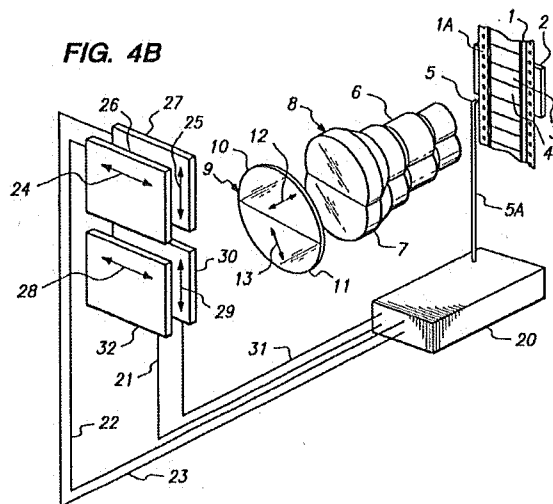
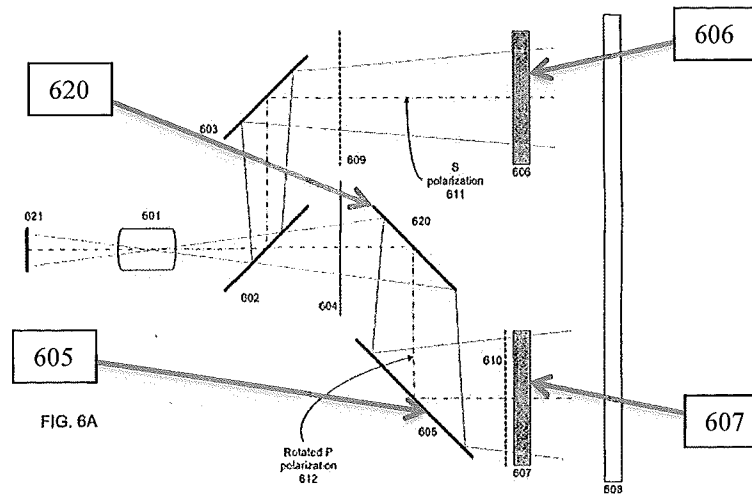


FIG. 4B

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(RX-0041, Figure 4B.) MasterImage states that, in Figure 4B of the Lipton '321 patent, a top modulator (including liquid crystal cells 26 and 27) and a bottom modulator (including liquid crystal cells 30 and 32) are employed to modulate the projection of each subframe. (RIB at 82.) Then, MasterImage contends that in the prior art ZScreen stereoscopic systems, as illustrated by the Lipton '850 and '321 patents, the brightness of the image reaching the screen is less than half the brightness of the original image output by the projector because to provide linearly polarized light, as required by a ZScreen polarization modulator, a linear polarizer, which acts as an absorptive polarizer, is in the path of the image light traveling from the projector to the screen. (*Id.*)

MasterImage contends that the primary difference between the stereoscopic system of the '455 patent and the prior art Lipton '850 patent is that the '455 patent system employs a polarizing beam splitter 602, a reflector 603 and a half wave retarder 604 in the optical path between the projection lens 601 and the polarization modulators 606, 607. (RIB at 88.) MasterImage then goes on to say that the stereoscopic system of the '455 patent utilizes a polarization conversion system between the projector and the polarization modulators. (*Id.*) Additionally, MasterImage submits that in the '455 patent embodiment shown in Fig. 6A (see below), two smaller ZScreens 606, 607 are used instead of a single large ZScreens as shown in prior art Fig. 1A of the '455 patent and in Fig. 6 of the Lipton '850 patent. (*Id.*)



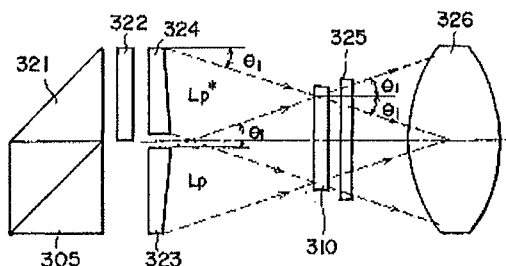
(JX-0001.0011, '455 Patent, Fig. 6A.) Further, MasterImage notes that in Fig. 6A of the '455 patent (*see above*), additional optical elements in the form of prisms or mirrors 620, 605 are placed in the path of the primary beam P so as to increase the path length of the primary beam P to match that of the secondary beam S whereby the two beams are substantially optically superimposed on the screen 608. (*Id.* at 88-89.)

MasterImage contends that the fundamental difference between the invention of the '455 patent as compared to the Lipton '850 patent prior art stereoscopic system is that the '455 patent employs a polarizing beam splitter, a reflector and a half wave retarder in between the projection lens and the polarization modulator (switch) and that these three optical elements were well known to those of ordinary skill to constitute the main components of a polarization conversion system. (*Id.* at 90.) MasterImage then contends that excerpts from a 1999 textbook by Edward H. Stupp & Matthew S. Brennesholtz, entitled "Projection Displays," (RX-0017) prove knowledge of polarization conversion systems as described in the "Projection Displays" textbook by Mr. Lipton and Mr. Cowan, two of the named inventors on the '455 patent; therefore, MasterImage alleges that this shows polarization conversion systems were well known to a person of ordinary skill in the art ("POSITA"). (RIB at 83-84.)

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MasterImage also points out that U.S. Patent No. 5,381,278 to Shingaki (RX-0057, “Shingaki ’278 patent”) discloses various configurations for polarization conversion units and their placement relative to a LC light valve in a projector as shown in Fig. 3 below.

FIG. 3



(RX-0057 (Shingaki ’278 patent, Fig. 3).) Accordingly, MasterImage alleges that the ’455 asserted claims are rendered obvious because the polarization recovery technique used to increase brightness in LCD projectors would have been recognized by a person of ordinary skill in the art as being applicable to increasing brightness in stereoscopic systems in the same way. (RIB at 90.) MasterImage contends that a POSITA would have been “[m]otivated by the desire to avoid losing half of the projected image light in prior art stereoscopic systems using a polarization modulator such as a ZScreen, one of ordinary skill would have found it obvious to employ polarization conversion in such systems.” (*Id.* at 90.) Thus, MasterImage contends that “[a]sserted [c]laims 1-3, 9-11, 13, 15, 17, 18, and 21 of the ’455 patent are invalid under 35 U.S.C. § 103 based on the Lipton ’850 patent in view of Shingaki, and claim 19 is invalid based on the Lipton ’850 patent in view of Shingaki further in view of Lipton ’321 patent.” (*Id.* at 98.)

In response, RealD contends that the ’455 patent is not invalid under 35 U.S.C. § 103 for a number of reasons. (CIB at 56-61; CRB at 77-87.) First, RealD points out that Shingaki ’278 (RX-0057) is designed to receive and split illumination light, not image light, and a POSITA

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would recognize that the PBS 305 in Shingaki '278 as well as the other components between PBS 305 and the light valve 310 are not intended nor designed to function with image light. (CIB at 56; CRB at 78.) Second, RealD argues that the alleged obvious combination proposed by MasterImage changes the basic principle under which the linear polarizer 3 of the Lipton '850 patent (RX-0030) was designed to operate, and thus the combination is insufficient to render the asserted claims of the '455 patent obvious. (CIB at 57-58; CRB at 80.) Third, RealD submits that Shingaki '278 requires the wedge-shaped lenses 323 and 324 (*see* RX-0057, Shingaki '278 patent, Fig. 3 above) to focus light on the light valve 310 inches from the lenses and is therefore inconsistent with MasterImage's proposed obvious combination which would require the wedge-shaped lenses 323 and 324 to direct light to a cinema projection screen surface 20-50 meters away. (CIB at 58; CRB at 81.) Fourth, RealD submits that Shingaki '278 points out that its Fig. 3 (*see* RX-0057, Shingaki '278 patent, Fig. 3 above) suffers from image quality issues and therefore a POSITA would not be motivated to use this type of configuration that is known to suffer from image quality issues. (CIB at 59; CRB at 82.) Fifth, RealD argues that MasterImage's analysis treads on the tell-tale sign of an impermissible hindsight analysis in that MasterImage's expert (Mr. Brennesholtz) uses the avoidance of light loss for the reason to combine the references, but actually uses the disclosed embodiments of the '455 patent to define the light loss problem. (CIB at 59; CRB at 83; *citing Mintz v. Dietz & Watson, Inc.*, 679 F.3d 1372, 1376 (Fed. Cir. 2012).) Last, RealD argues that Shingaki '278 teaches away from overlapping light paths while the combination proposed by MasterImage involves overlapping image light paths on a projection screen. (CIB at 60; CRB at 83.)

The ALJ finds that Lipton '850 (RX-0030; issued on December 20, 1988), Lipton '321 (RX-0041; CX-0647; issued on January 2, 1996), Shingaki '278 (RX-0057; issued on January 10,

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1995) and “Projection Displays” (1st Ed. 1999) by Edward H. Stupp and Matthew S. Brennesholtz (RX-0017) qualify as prior art as they were available before the ’455 patent. (JX-0001; filed on October 18, 2006; issued on December 28, 2010.)

The ALJ finds that MasterImage has failed to prove by clear and convincing evidence that claims 1-3, 9-11, 13, 15, 17, 18, 19, and 21 of the ’455 patent are invalid due to obviousness in view of the combination of Lipton ’850, Lipton ’321, Shingaki ’278 and “Projection Displays” (1st Ed. 1999) by Edward H. Stupp and Matthew S. Brennesholtz. The record shows that the Shingaki ’278 patent discloses an arrangement of components contained inside (not outside as is the invention of the ’455 patent) a projector intended to work on illumination light (not image light as is the invention of the ’455 patent) whereby the distance between the components is within inches. (See CX-1550C (Hesselink Rebuttal Witness Statement) at Q/A 163.) Accordingly, the ALJ finds that the Shingaki ’278 patent actually teaches away from the use of the components disclosed in Shingaki ’278 patent for image light as well as for an environment 60 feet away as disclosed in the ’455 patent vice inches away as in the Shingaki ’278 patent. (See *In re Gurley*, 27 F.3d 551, 553 (Fed. Cir. 1994); see also *Certain Rubber Antidegradants*, Inv. No. 337-TA-533 (Remand), Final ID (Dec. 3, 2008) (stating, “KSR reaffirms that obviousness is negated when the prior art teaches away from the invention.”)). Additionally, the ALJ finds MasterImage’s contention that there is no problem using any of the components from Shingaki ’278, Fig. 3 for imaging light as unpersuasive because the use of polarization conversion would create distortions which, while not problematic for illumination light, are problematic for image light. (See CX-1031C (Sharp Witness Statement) at Q/A 35.) Further, the ALJ finds that MasterImage’s lack of reasoning for the use of the Shingaki ’278 patent disclosure for a 50-meter environment vice an environment measured in inches coupled with a

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reasonable explanation of why a POSITA would expect a disclosure specifically for illumination light to work on the much more complex image light is telling and is additional evidence to show that MasterImage failed to prove that a POSITA would have combined the Shingaki '278 patent with the Lipton '850 patent. In a similar vein, the ALJ finds that MasterImage's lack of any valid reasoning for the use of a polarization conversion system disclosed in "Projection Displays" (1st Ed. 1999) used to illuminate a liquid crystal display ("LCD") panel for an image to be displayed 20-50 meters away does not meet the clear and convincing burden to invalidate a patent based on obviousness. Accordingly, the ALJ finds that the combination of the Shingaki '278 patent with Lipton '850, Lipton '321, and "Projection Displays" (1st Ed. 1999) does not render claims 1-3, 9-11, 13, 15, 17, 18, 19, and 21 of the '455 patent invalid for obviousness.

Additionally, the ALJ finds MasterImage's contention that the use of the polarizer from the Lipton '850 patent in combination with the polarization conversion system disclosed in Shingaki '278 patent, Fig. 3 is not persuasive. The record shows that the polarizer 3 from Fig. 3 of the Lipton '850 patent functions as an absorptive polarizer; however, the polarization conversion system shown in Fig. 3 of the Shingaki '278 patent functions as a clean-up polarizer not an absorptive polarizer. Accordingly, MasterImage did not show by clear and convincing evidence that a POSITA would have attempted to use this combination nor has MasterImage shown that a POSITA would have reasonably expected a successful outcome from this combination. (See *PharmaStem Therapeutics, Inc. v. ViaCell, Inc.*, 491 F.3d 1342, 1360 (Fed. Cir. 2007)(citing *Medichem S.A. v. Rolabo S.L.*, 437 F.3d 1175, 1164 (Fed. Cir. 2006)); see also *Noelle v. Lederman*, 355 F.3d 1343, 1351-52 (Fed. Cir. 2004); *Brown & Williamson Tobacco Corp. v. Philip Morris, Inc.*, 229 F.3d 1120, 1121 (Fed. Cir. 2000) and *KSR*, 550 U.S. at 416 ("a combination of elements 'must do more than yield a predictable result'; combining elements that

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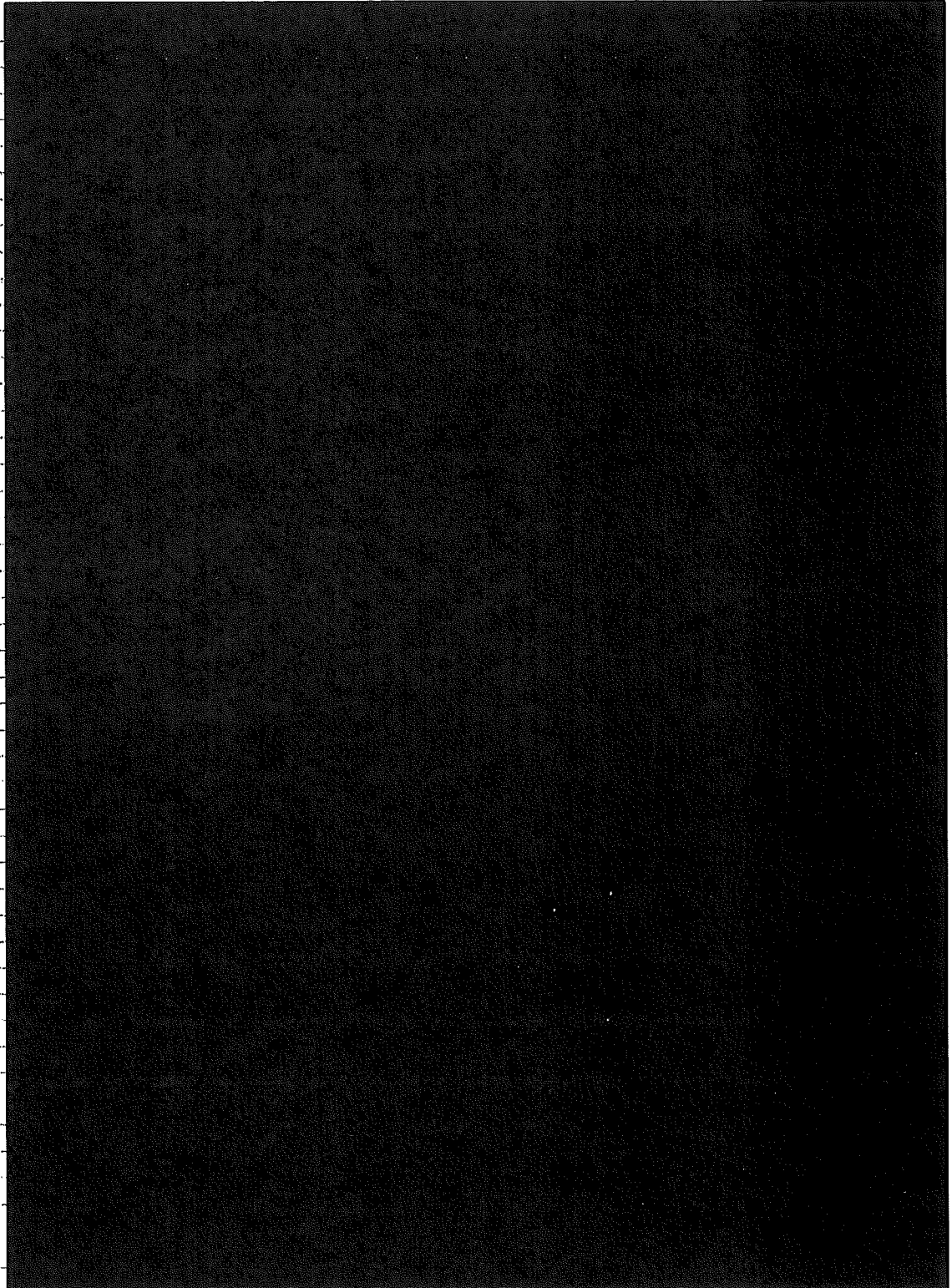
work together ‘in an unexpected and fruitful manner’ would not have been obvious”). Accordingly, the ALJ finds that the combination of the Shingaki ’278 patent with Lipton ’850, does not render claims 1-3, 9-11, 13, 15, 17, 18, and 21 of the ’455 patent invalid for obviousness.

The ALJ also finds MasterImage’s contention that the polarization recovery technique used to increase brightness in LCD projectors would have been recognized by a POSITA as being applicable to increasing brightness in stereoscopic systems in the same way as unpersuasive. MasterImage’s contention in this regard is based on impermissible hindsight because the shortfall proposed and solved by the ’455 patent (*i.e.*, avoidance of losing half of the image light) is used as the motivation to combine the references in MasterImage’s analysis and arguments. (*See* RX-0588C (Brennesholtz Witness Statement) at Q/A 510; *see also Mintz v. Dietz & Watson, Inc.*, 679 F.3d 1372, 1377 (Fed. Cir. 2012) (“The statement of the problem represents a form of prohibited reliance on hindsight.”).)

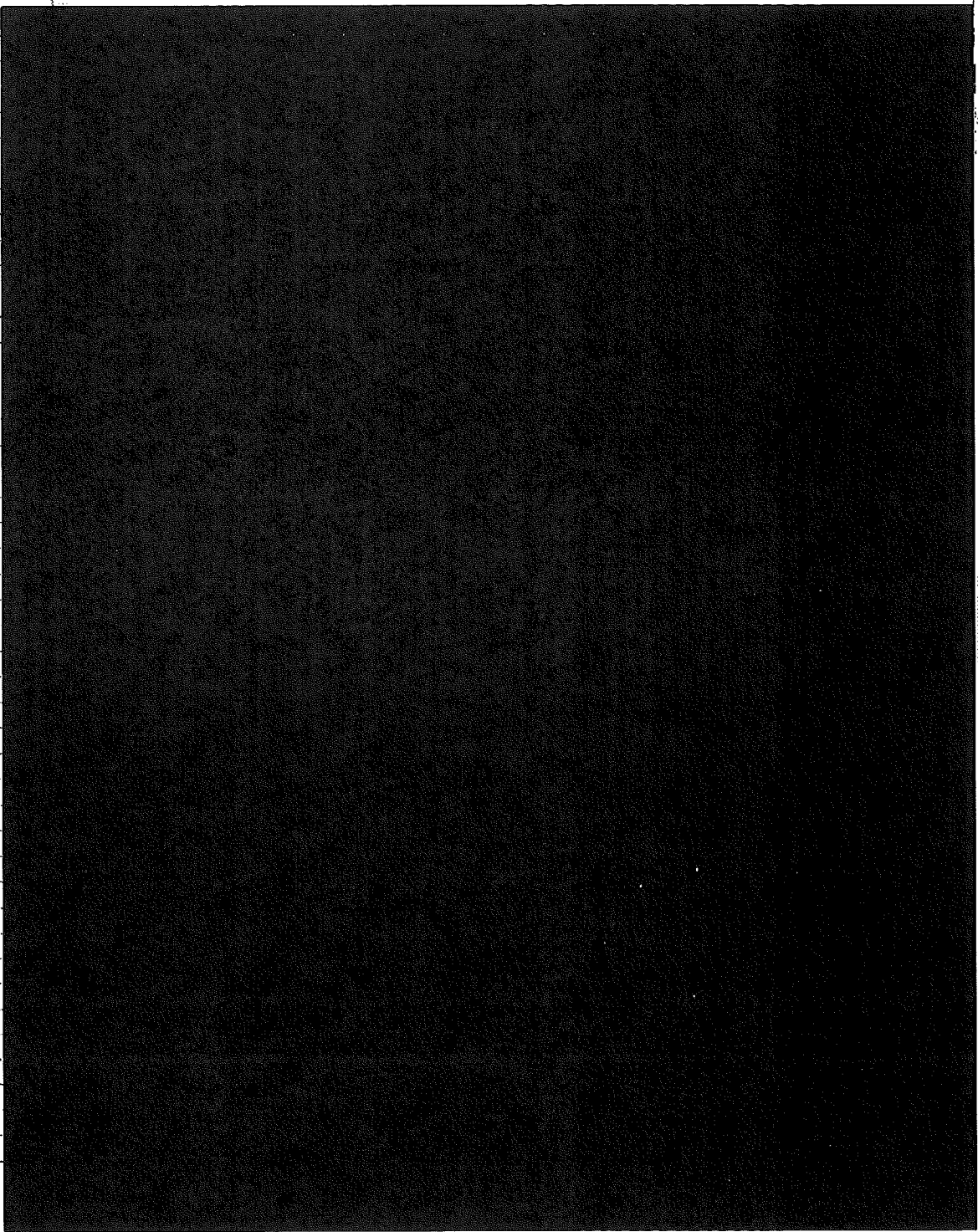
Last, the ALJ finds that MasterImage’s contention that the information in Dr. Robinson’s notebook (*see* RX-0062C) shows the ’455 patent is invalid for obviousness is also not persuasive. While Dr. Robinson’s notebook contains the statements [REDACTED] [REDACTED] [REDACTED] (*see id.*), the ALJ finds these statements do not meet the clear and convincing burden to invalidate a patent based on obviousness because these statements must be considered in context of Dr. Robinson’s entire notebook. The record shows that the statements and the accompanying sketch in Dr. Robinson’s notebook (*see* RX-0062C at REALD_ITC0005588 on Page 125 of the ID below) coupled with the technical issues disclosed on the next page of the notebook (*see id.* at REALD_ITC0005589 on Page 126 of the ID below)

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show the various difficulties and challenges associated with actually working out the details to make Dr. Robinson's idea work. (*See* Hearing Tr. (Sharp), Vol. 3, 689:2-7 ("He also talks about image operations, which were a big concern, astigmatism and how to correct it, and using cub PBS versus a plate, and correcting for it. So yes, there's – it's clear that he's gone from a simplistic drawing to starting to address the issues.").)



RX-0062C at REALD_ITC0005588.



(RX-0062C at REALD_ITC0005589.)

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Accordingly, the ALJ finds that MasterImage has failed to prove by clear and convincing evidence that claims 1-3, 9-11, 13, 15, 17, 18, 19, and 21 of the '455 patent are invalid for obviousness under 35 U.S.C. § 103.

3. '296 Patent: 35 U.S.C. § 103

The '296 patent has the same disclosure as the '455 patent; however, the '296 patent claims are directed to a dual project arrangement described in the patent. (*See* JX-0003; *see also* Corr. RX-0590C (Kessler Witness Statement) at Q/A 282 (“While the '296 patent has the same disclosure as the '455 patent, its claims are directed to the dual projector arrangements described in the patent.”))

For the same reasons as explained *supra* in Section VI.D.2, the ALJ finds that MasterImage has not met its burden of proving the asserted claims of the '296 patent are invalid for obviousness under 35 U.S.C. § 103.

4. '934 Patent

a. March 24, 2006 Drawing

MasterImage argues that the asserted claims of the '934 patent would be obvious in view of the March 24, 2006 Drawing. (RIB at 74-75.) However, as set forth *supra*, the ALJ found that the March 24, 2006 drawing was not 102(g) prior art and, therefore, cannot be used in an obviousness analysis.

Even if the March drawing were considered 102(g) prior art, the ALJ finds that MasterImage has failed to show by clear and convincing evidence that the March drawing discloses each and every element of the asserted claims. MasterImage does not even perform a claim by claim analysis, let alone an element by element analysis for each claim. Rather, MasterImage reargues the easy swap of mirrors for prisms; conclusorily asserts that the invention

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was reduced to practice and summarily states that the March drawing is prior art and “if not anticipated under § 102(g), the allegedly ‘inoperative’ line drawing coupled with the other emails and write-ups regarding the use of mirrors or prisms to correct for optical path length differences would invalidate the claims as obvious under § 102(g)/ § 103.” (RIB at 75.) Furthermore, as with its anticipation analysis, MasterImage’s arguments are devoid of any citations to evidence or testimony. The ALJ finds that this fails to meet the heavy burden of proving by clear and convincing evidence that claims 1, 6, and 11 are obvious in view of the March drawing.

b. July 27, 2006 Final Report

MasterImage argues that the asserted claims of the ’934 patent would be obvious in view of the July 27, 2006 Final Report because it would have been obvious to one of ordinary skill in the art “to employ linear polarization switches.” (RIB at 72-74.) MasterImage argues that the last limitation of claim 1, “a polarization switch subsystem operable to receive first and second light bundles from the first and second light paths, respectively, and to selectively translate both the polarization states of the first and second light bundles to one of a first output SOP and a second output SOP,” is still disclosed in the July 2006 Final Report because it would have been obvious to one of ordinary skill in the art to employ linear polarization switches in place of the ZScreens. (RIB at 73.) MasterImage argues that the inventors of the ’455 patent contemplated using linear polarization switches. (RIB at 73-74.)

RealD argues that MasterImage’s arguments improperly rely on Dr. Sharp’s erroneous deposition testimony. (CRB at 73.) Furthermore, RealD argues that MasterImage has failed to provide any motivation for one of ordinary skill in the art to substitute linear polarization switches for ZScreens in the July 2006 Final Report and, further, that the July 2006 Final Report fails to disclose the outputs that are of the same state of polarization. (CRB at 74.)

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The ALJ finds that MasterImage has failed to show by clear and convincing evidence that the July 27, 2006 Final Report discloses each and every limitation of claim 1 of the '934 patent. Specifically, the ALJ finds that the July 2006 Final Report fails to disclose a polarization switch subsystem operable to receive first and second light bundles from the first and second light paths, respectively, and to selectively translate both the polarization states of the first and second light bundles to one of a first output SOP and a second output SOP. The ALJ finds that MasterImage has failed to present any evidence as to why one of ordinary skill in the art would be motivated to use linear polarization switches instead of the ZScreen at the time of the July 2006 Final Report. While MasterImage explains how the linear polarization switches would work with the July 2006 Final Report, it fails to provide any motivation as to why one would substitute the switches in. Indeed, the need for motivation is particularly pressing in this instance since the July 2006 Final Report actually discloses circular polarization and the evidence shows that the circular polarization could not be driven linearly in an acceptable manner. (Tr. at 613:9-18, 602:5-11; RX-0072C at 3.) The '455 patent inventors themselves were unsuccessful in figuring out how to "make it work linear," indicating that one of ordinary skill in the art would not have had a reasonable expectation of success. (JX-0021C at 104:2-16.)

In addition, MasterImage's obviousness argument suffers from the same cursory and conclusory analysis as previous invalidity arguments. While MasterImage does cite relevant testimony in support of its arguments, it fails to perform an element by element analysis in order to meet its burden.

Therefore, the ALJ finds that MasterImage fails to show by clear and convincing evidence that claims 1, 6 and 11 of the '934 patent is invalid in view of the July 27, 2006 Final Report.

c. Lipton '850, Shingaki '278 and Lipton '321

MasterImage's arguments that the '934 patent is invalid in view of Lipton '850, Shingaki '278 and Lipton '321 are the same as those for the '455 patent. For the same reasons set forth *supra* in Section VI.D.2, the ALJ finds that MasterImage has failed to show by clear and convincing evidence that the '934 patent is obvious in light of Lipton '850, Shingaki '278 and Lipton '321.

Furthermore, the '934 patent requires "a polarization switch subsystem operable to receive first and second light bundles from the first and second light paths respectively, and to selectively translate both the polarization states of the first and second light bundles to one of a first output SOP and a second output SOP." (JX-0004 at claim 1.) However, the ZScreen of Lipton '850, the switch used in MasterImage's obviousness combination, does not operate to receive and operate on multiple light paths, respectively, as required by the claims of the '934 Patent. (Tr. at 696:25-697:20.)

Moreover as Lipton '850 was already cited in the '934 patent's specification and was before the examiner during examination of the Asserted Claims of the '934 patent, MasterImage faces a heavier burden. (See JX-0004 at (56) and 1:29-32) (*Impax Labs.*, 468 F.3d at 1378 (Fed. Cir. 2006) ("When the prior art was before the examiner during prosecution of the application, there is a particularly heavy burden in establishing invalidity."))

Therefore, the ALJ finds that MasterImage has failed to show by clear and convincing evidence that the '934 patent is obvious in view of Lipton '850, Shingaki '278 and Lipton '321.

5. Secondary Considerations of Nonobviousness

As set forth *supra* in Section VI.D.1-4, the ALJ has found that MasterImage failed to show by clear and convincing evidence that the asserted claims of the '455 patent, the '296 patent

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and the '934 patent are invalid for obviousness under 35 U.S.C. § 103. As such, an analysis of secondary considerations is not necessary.

Nevertheless, in the event that the Commission finds that any of the combination of prior art references discloses each and every limitation of the asserted claims, the ALJ finds that secondary considerations of non-obviousness preclude a finding of invalidity.

Objective indicia of nonobviousness play a critical role in the obviousness analysis. They are “not just a cumulative or confirmatory part of the obviousness calculus but constitute[] independent evidence of nonobviousness.” *Ortho–McNeil Pharm., Inc. v. Mylan Labs., Inc.*, 520 F.3d 1358, 1365 (Fed. Cir. 2008). Objective indicia “can be the most probative evidence of nonobviousness in the record, and enables the court to avert the trap of hindsight.” *Crocs, Inc. v. Int'l Trade Comm'n*, 598 F.3d 1294, 1310 (Fed. Cir. 2010) (internal quotation marks omitted).

First, the record shows that the RealD patented XL products, which embody the patents at issues as set forth *infra* in Section VIII.C, enjoyed significant commercial success as shown by the numbers of XL products installed and being used since 2008. (*See* CX-0722C (Lewis Witness Statement) at Q/A 29-33.) Second, the record shows that RealD's patented XL products have received industry praise as shown by a number of industry awards for these products. (*See* CX-1550C (Hesselink Rebuttal Witness Statement) at Q/A 216-221; *see also* CX-730RC (Schuck Rebuttal Witness Statement) at Q/A 80.) Third, the record shows that there was long-felt but unresolved need for increased brightness in 3D cinema systems. (*See, e.g.*, CX-1550C (Hesselink Rebuttal Witness Statement) at Q/A 211-215; CX-0127RC (Cowan Rebuttal Witness Statement) at Q/A 7-10; Third Corr. RX-0588C (Brennesholtz Witness Statement) at Q/A 405.) Thus, the ALJ finds that secondary considerations of non-obvious preclude a finding of obviousness.

E. Inventorship

Joint inventorship is governed by 35 U.S.C. § 116, which states, in relevant part:

When an invention is made by two or more persons jointly, they shall apply for patent jointly and each make the required oath, except as otherwise provided in this title. Inventors may apply for a patent jointly even though (1) they did not physically work together or at the same time, (2) each did not make the same type or amount of contribution, or (3) each did not make a contribution to the subject matter of every claim of the patent.

“This provision sets no explicit lower limit on the quantum or quality of inventive contribution required for a person to qualify as a joint inventor. Rather, a joint invention is simply the product of a collaboration between two or more persons working together to solve the problem addressed.” *Fina Oil and Chem. Co. v. Ewen*, 123 F.3d 1466, 1473 (Fed. Cir. 1997); *citing Burroughs Wellcome Co. v. Barr Labs., Inc.*, 40 F.3d 1223, 1227 (Fed. Cir. 1994.)

“A patent is invalid if more or less than the true inventors are named.” *Trovan, Ltd. v. Sokymat SA*, 299 F.3d 1291, 1301 (Fed. Cir. 2009). Nevertheless, inasmuch as a patent is presumed valid, there is a presumption that the named inventors on a patent are the true and only inventors. *Id.* (citing, *inter alia*, 35 U.S.C. § 282). “Moreover, to the extent that fewer than the true inventors are named on a patent, the patent may be corrected to so reflect as long as the nonjoinder was done without deceptive intent on the part of the person erroneously left off the patent.” *Id.* (citing 35 U.S.C. § 253).

“Inventorship is a mixed question of law and fact: The overall inventorship determination is a question of law, but it is premised on underlying questions of fact.” *Eli Lilly & Co. v. Aradigm Corp.*, 376 F.3d 1352, 1362 (Fed. Cir. 2004). A joint invention is the product of collaboration between two or more persons working together to solve the problem addressed. The inventors need not work physically together or contemporaneously to be joint inventors; nor

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must each inventor contribute equally or to each claim of the patent. *Univ. of Pittsburgh v. Commonwealth Sys. of Higher Ed.*, 573 F.3d 1290, 1297 (Fed. Cir. 2009).

“[A] joint inventor must contribute in some significant manner to the conception of the invention.” *Fina Oil and Chem. Co. v. Ewen*, 123 F.3d 1466, 1473 (Fed. Cir. 1997). The contribution of a joint inventor must be significant. As such, “a person will not be a co-inventor if he or she does no more than explain to the real inventors concepts that are well known and the current state of the art.” *Id.* at 1473. Rather, inventorship requires “an inventive act.” *Id.* Nevertheless, “[i]f a person supplies the required quantum of inventive contribution, that person does not lose his or her status as a joint inventor just because he or she used the services, ideas, and aid of others in the process of perfecting the invention.” *Id.* “[T]hose others may also in appropriate circumstances become joint inventors by their contributions. In addition, a person is not precluded from being a joint inventor simply because his or her contribution to a collaborative effort is experimental.” *Id.*

The inventors named in an issued patent are presumed correct, and a party alleging misjoinder of inventors must prove its case by clear and convincing evidence. *Univ. of Pittsburgh*, 574 F.2d at 1297; citing *Eli Lilly & Co. v. Aradigm Corp.*, 376 F.3d 1352, 1358 (Fed.Cir.2004). The movants must also show that the persons to be removed did not contribute to the invention of any of the allowed claims. *Univ. of Pittsburgh*, 574 F.2d at 1297.

1. '296 Patent

MasterImage argues that Mr. Jerry Carollo is not properly named as an inventor on the '296 patent and, therefore, the patent is invalid. (RIB at 129.) First, MasterImage contends that “Matt Cowan and Lenny Lipton, two of the named inventors on the '455 and '296 patents, testified that Jerry Carollo’s only contribution to the subject matter of the '455 and '296 patents

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is the use of a ‘deformable mirror.’” (*Id.*) Then, MasterImage states that a “deformable mirror” is not recited in any of the claims of the ’296 patent and therefore Mr. Carollo is not properly named as an inventor on the ’296 patent as he did not contribute to the conception of any aspect of the claimed invention. (*Id.*) Further, MasterImage submits that Dr. Hesselink’s assertion that Mr. Carollo is properly named as an inventor because a deformable mirror is a type of “reflector configured to receive ... path light energy ... and to reflect the ... path light energy ... toward a surface,” as recited in independent claim 1 is groundless because Matt Cowan and Lenny Lipton had the idea of using mirrors or prisms as reflectors as stated in their conception documents long before Mr. Carollo was contacted to perform a feasibility study. (*Id.*)

In response, RealD argues that “Mr. Carollo worked substantially independently on the architectures of the invention, and aspects of those architectures became a part of the specification and claims of the ’296 Patent.” (CRB at 115.) Additionally, RealD points out that there is no clear and convincing evidence that Mr. Carollo did not contribute to the conception of at least one claim of the ’296 patent; as such, MasterImage’s arguments for invalidity based on inventorship should fail. (*Id.*) Further, RealD submits that Mr. Carollo’s experience was needed to develop the invention of the ’455 and ’296 patents by contributing to the use of a deformable mirror to get two images into coincidence on the screen and adding optical power to the mirror. (*Id.* at 111.) Specifically, RealD points out that Figure 5A of the ’455 and ’296 patents includes the deformable mirror element 551-552 and 571-572 as a part of Mr. Carollo’s contribution to the conception of the inventions. (*Id.*) RealD also contends that Mr. Carollo “took a high-level overview of the PBS project and created the architectural diagram that became Figure 3 of the ’455 Patent, upon which a number of other figures of the ’455 and ’296 Patents were based.” (*Id.*)

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For the reasons set forth below, the ALJ finds that MasterImage has failed to prove by clear and convincing evidence that the '296 patent is invalid for improperly naming Mr. Carollo as an inventor. First, the record shows that Mr. Cowan and Mr. Lipton needed Mr. Carollo to develop the invention due to Mr. Carollo's experience with using deformable mirrors to get two images into coincidence on the screen and also to add optical power to the mirror. (Hearing Tr. (Mr. Lipton) Vol. 2 at 264:13-265:2.)

Q And my question is, number one is, you testified that Mr. Jerry Carollo's contribution was in connection with the deformable mirror.

Do you recall that much?

A Yes.

Q And then I think you testified about whether it was the idea of using the deformable mirror or whether it was how to make it deformable. So maybe you could just clarify for the record what you intended so I don't paraphrase it.

A My recollection is that it had occurred to me that since we were going to use the so-called fold mirror to get the two images into coincidence on the screen, that it might be possible to add some optical power to the mirror. But I had no experience with how to do that. I just knew theoretically it might be possible.

And Mr. Carollo knew how to do it.

Q So he knew how to make the fold mirror include optical power?

A Yes.

(Hearing Tr. (Mr. Lipton) Vol. 2 at 264:13-265:2.) The evidence also shows that Mr. Carollo created the architectural diagram that became Figure 3 of the '455 patent and became the basis for the other figures of the '455 and '296 patents from an overview of the PBS project. Specifically, the record shows that Mr. Carollo was given the April 28, 2006 RealD PBS project document (RX-0070C), which did not include any drawings or figures and included a study objective section with questions such as "can it be done," and Mr. Carollo took this document

and created a Final Feasibility Report, dated July 27, 2006 (RX-0072C), including the following figure.

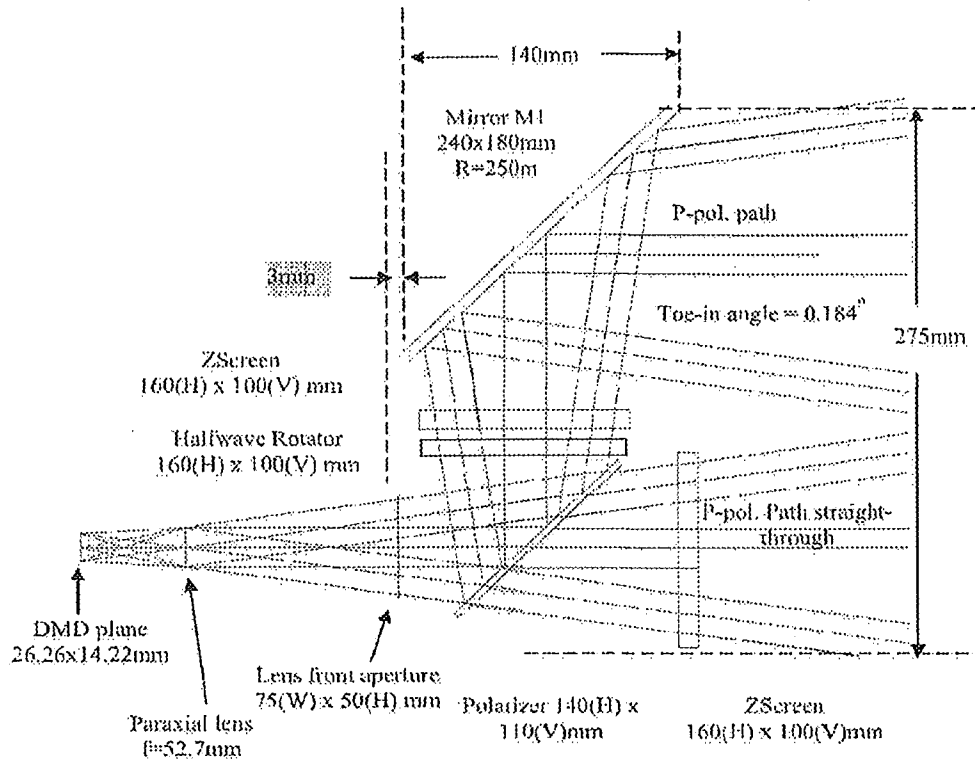


Figure 4 The attachment configuration with a WGP, a concave fold mirror with $R=250\text{m}$ and 2 ZScreens.

(RX-0072C at REALD_ITC0001343.) The record shows that the details provided in the July 27, 2006 Final Feasibility Report included contributions to the conception of the '296 patent invention because the architectures from the July 27, 2006 report as well as the September 22, 2006 Final Design Report (RX-0071C) are described and claimed in the '455 and the '296 patents. (See Third Corrected RX-0588C (Brennesholtz Witness Statement) at Q/A 601 (“Yes. In my opinion, there is a correspondence between each optical element in Figure 4 of the Final Report and Figure 3 of the '455 patent.”).) As such, the ALJ finds that the record shows that Mr. Carollo collaborated with Mr. Cowan and Mr. Lipton to solve the problem at hand. (See *Fina*

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Oil, 123 F.3d at 1473 (“a joint invention is simply the product of a collaboration between two or more persons working together to solve the problem addressed.”).)

Additionally, the ALJ finds that MasterImage’s argument is unpersuasive and does not meet its heavy burden of showing misjoinder or nonjoinder of inventors by clear and convincing evidence. MasterImage’s argument that Mr. Carollo did not contribute to any claim of the ’296 patent because none of the claims recite a “deformable mirror” is incorrect because this argument is too limiting and narrow with respect to the notion of conception and contribution to the invention by collaboration. (*See Fina Oil*, 123 F.3d at 1473.) Specifically, the record shows overall collaboration between Mr. Carollo and the other two inventors of the ’296 patent in conceiving of the invention. (*Id.*) The record shows that Mr. Carollo worked with Mr. Lipton and Mr. Cowan to solve the problem at hand, namely to increase the 3D image quality as shown by the April 28, 2006 RealD PBS project document (RX-0070C) in conjunction with the July 27, 2006 Final Feasibility Report (RX-0072C) and the September 22, 2006 Final Design Report (RX-0071C). (*See Univ. of Pittsburgh*, 573 F.3d at 1297 (“The inventors need not work physically together or contemporaneously to be joint inventors ...”).) Accordingly, the ALJ finds that MasterImage did not put forth clear and convincing evidence that Mr. Carollo did not contribute to the conception of the ’296 patent.

III. INEQUITABLE CONDUCT

A. Applicable Law

A patent shall be unenforceable on grounds of inequitable conduct if material information is withheld from the PTO by the patentee, coupled with intent to mislead or deceive. *LaBounty Mfr. Inc. v. U.S. Int’l Trade Comm’n*, 958 F.2d 1066, 1070 (Fed. Cir. 1992). “The accused infringer must prove by clear and convincing evidence that the applicant knew of the reference, knew that it was material, and made a deliberate decision to withhold it.” *Therasense v. Becton*,

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Dickinson and Co., 649 F.3d 1276, 1290 (Fed. Cir. 2011). The Federal Circuit has emphasized that

[t]he need to strictly enforce the burden of proof and elevated standard of proof in the inequitable conduct context is paramount because the penalty of inequitable conduct is so severe... [j]ust as it is inequitable to permit a patentee who obtained a patent through deliberate misrepresentations or omissions of material information to enforce the patent right against others, it is also inequitable to strike down an entire patent where the patentee only committed minor missteps or acted with minimal culpability or in good faith. As a result, courts must ensure that an accused infringer asserting inequitable conduct has met his burden on materiality and deceptive intent with clear and convincing evidence before exercising its discretion on whether to render a patent unenforceable.

Star Scientific, Inc. v. R.J. Reynolds Tobacco Co., 537 F.3d 1357, 1366 (Fed. Cir. 2008).

Those two main burdens, materiality and intent, are separate requirements for a finding of inequitable conduct and should be analyzed independent of each other. *Therasense*, 649 F.3d at 1290. In other words, a strong finding for one requirement cannot compensate for deficiencies in the other requirement. *Id.* (“A district court should not use a ‘sliding scale,’ where a weak showing of intent may be found sufficient based on a strong showing of materiality, and vice versa”).

Information that is withheld or misrepresented to the PTO is considered material if it satisfies a “but for” test:

When an applicant fails to disclose prior art at the PTO, that prior art is but-for material if the PTO would not have allowed that claim had it been aware of the undisclosed prior art. Hence, in assessing the materiality of a withheld reference, the court must determine whether the PTO would have allowed the claim if it had been aware of the undisclosed reference. In making this patentability determination, the court should apply the preponderance of the evidence standard and give claims their broadest reasonable construction.

Id. at 1291-92.

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Although but-for materiality is required for a finding of inequitable conduct, there is an exception for cases of affirmative egregious misconduct. *Id.* at 1292. Such conduct is *per se* material and includes, but is not limited to, filing false affidavits. *Id.* “Because neither mere nondisclosure of prior art references nor failure to mention prior art references in an affidavit constitutes affirmative egregious misconduct, claims of inequitable conduct that are based on such omissions require proof of but-for materiality.” *Id.* at 1292-93.

An inequitable conduct claim also requires proof that the patentee acted with the specific intent to deceive the PTO. *Star Scientific*, 537 F.3d at 1366. A finding that a patentee was negligent or grossly negligent regarding an omission or misrepresentation to the PTO does not satisfy the intent requirement. *Therasense*, 649 F.3d at 1290. Specific intent to deceive can be inferred from indirect or circumstantial evidence; it cannot, however, be inferred from materiality of the omitted or misrepresented reference. *Id.* at 1290; *see also Larson Mfg. Co. of S.D., Inc. v. Aluminart Prods. Ltd.*, 559 F.3d 1317, 1340 (Fed. Cir. 2009). Additionally, the absence of a good faith explanation for withholding a material reference does not, by itself, prove intent to deceive. *Star Scientific*, 537 F.3d at 1368. To satisfy the clear and convincing evidence standard the specific intent to deceive must be “the single most reasonable inference able to be drawn from the evidence.” *Therasense*, 649 F.3d at 1290 (citing *Star Scientific*, 537 F.3d at 1366). When multiple reasonable inferences can be drawn as to why a reference was withheld, deceptive intent cannot be found. *Id.* at 1290-91.

B. Materiality and Intent

MasterImage appears to argue that the materiality requirement of inequitable conduct is satisfied because the '934 patent is invalid in view of the '455 patent or vice versa. (RIB at 133.) Specifically, MasterImage contends that but-for the failure to bring all the information about the '455 patent and the Schuck ('602/'934) patent to the attention of the patent examiner, the claims

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of at least one patent would not and could not have been allowed and therefore the materiality requirement is therefore satisfied. (*Id.*) MasterImage points out that in mid-April 2008, the Patent Office placed a Notice of Change of Address in File Wrapper of the '198 application³ and the '243 application⁴ officially authorizing Baker & McKenzie LLP and the same attorneys prosecuting the Schuck et al. '198 application on RealD's behalf, to also prosecute the Cowan et al. '243 application on RealD's behalf. (*Id.* at 136.) As such, MasterImage argues that in mid-April 2007, RealD, the inventors, and the prosecuting attorneys knew that there were two applications disclosing and claiming essentially the same "polarization conversion" or "dual aperture" system; however, no one disclosed this information to the Patent Office at that time. (*Id.*) MasterImage points out that on October 7, 2010, over three years after first learning about the two applications and after receiving a notice of allowance in one of the applications, RealD listed the published applications as one item in a long list of items on an Information Disclosure Statement ("IDS"). (*Id.*)

MasterImage submits that the intent requirement of inequitable conduct is satisfied because the only reasonable inference is that RealD, ColorLink and the prosecuting attorneys knew about the prosecution of the '455 patent application and the '934 patent application at the very same time and withheld the information from the patent examiner. Further, MasterImage stated that "[g]iven that the prosecuting attorneys and the inventors knew about the common subject matter of the applications and as of at least August 2010 a comparison of the two applications was performed, yet pursued claims with functionally identical components covering the same products and methods, up through the '934 patent issuing on July 17, 2012, it is simply

³ The '198 application issued as the '602 patent.

⁴ The '243 application issued as the '455 patent.

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not reasonable to infer that the prosecuting attorneys and inventors did not realize that they had a duty to investigate priority and to advise the patent office that the invention of the '455 patent inventors was prior art to the Schuck et al. '198 Application under 35 U.S.C. §102(g), something that required knowledge of secret information known only to RealD regarding dates of conception and diligence to reduction practice.” (RIB at 139-140.) Thus, MasterImage argues that “[t]he only reasonable inference is that RealD withheld material information from the patent examiners during prosecution with intent to deceive the patent examiners so that it could obtain two patents on the same invention.” (*Id.* at 140.) MasterImage also contends that it was not reasonable to infer all this was due to some failure to appreciate the materiality of the information being withheld. (*Id.*) Hence, MasterImage argues that “[t]he '455 patent and other patents in suit (i.e., the '934 and '296 patents) are therefore unenforceable due to inequitable conduct.” (*Id.*)

RealD contends that MasterImage failed to demonstrate by clear and convincing evidence that anyone acted with the specific intent to deceive the PTO or withheld any material information from the PTO. (CRB at 115.) First, RealD submits that MasterImage never actually identified a specific individual who engaged in inequitable conduct. (*Id.* at 116.) Second, RealD points out that MasterImage “identifies no case where the alleged prior art was disclosed and considered by the examiner, as in this case, yet the court nevertheless found inequitable conduct.” (*Id.*) Further, RealD points out that MasterImage cannot overcome the fact that the applications MasterImage contends should have been disclosed were disclosed prior to the issuance of each of the assert patents. (*Id.*) Third, RealD contends that the PTO was aware of both patent applications (*i.e.*, the patent application for the '455 patent and the patent application for the '934) when each was respectively issued and therefore there can be no ‘but-for’ materiality, because

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the claims were actually allowed over each reference, and hence there can be no inequitable conduct.” (*Id.* at 118.)

For the reasons set forth below, the ALJ finds that MasterImage has failed to meet its heavy burden of proving by clear and convincing evidence that the asserted patents are unenforceable due to inequitable conduct.

As noted above, in assessing the materiality of withheld references, the ALJ must determine whether the Patent Office would have allowed the claim if it had been aware of the undisclosed reference, *i.e.*, “but-for materiality.” (*See Therasense*, 649 F.3d at 1291-92.) However, in the situation at hand, the ALJ points out that the PTO did, in fact, know about the references that MasterImage cited as “but-for” material. Specifically, the record shows that the ’198 application was disclosed during the prosecution of the ’243 application and the ’243 application was cited in the prosecution of the ’198 application prior to the issuance of either patent. (*See* JX-0005 (file history for U.S. Patent No. 7,857,455) at REALD_ITC0000126; JX-0006 (file history for U.S. Patent No. 7,905,602) at REALD_ITC0000441; *see also* Hr’g Tr. vol. 4 at 808:1-11, 810:18-811:6, 829:23-840:7.) The burden of proof in proving materiality falls on the party asserting inequitable conduct, and, here, MasterImage has totally failed to show that the Patent Office would not have allowed the claims at issue because, in fact, the Patent Office did allow the claims with knowledge of the references being used by MasterImage in its inequitable conduct contention. In short, the Patent Office’s allowance of the claims at issue with knowledge of the references (*i.e.*, the ’198 application for the ’243 application and the ’243 application for the ’198 application) is enough to show that MasterImage has failed to prove inequitable conduct by clear and convincing evidence. *Therasense*, 649 F.3d at 1290 (“Intent and materiality are separate requirements.”)

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The ALJ finds that the evidence also fails to show that RealD had a specific intent to deceive the PTO. First, RealD did, in fact, disclose the references to the Patent Office on October 7, 2010. But, even under an assumption of untimeliness in disclosing these references to the Patent Office by the parties involved in prosecuting the patent applications, the references were in fact disclosed before the patents were finally issued. The ALJ finds the intent prong of inequitable conduct cannot be proven by MasterImage, especially under the clear and convincing evidence standard, when the references were actually disclosed to the Patent Office. In short, deceptive intent cannot be found under these circumstances whereby the patentee provided notice of the references to the Patent Office.

Additionally, the ALJ finds MasterImage's Manual of Patent Examining Procedural ("MPEP") § 2304.05 argument is not persuasive and not correct because this part of the MPEP deals with interferences and therefore is not applicable to an inequitable conduct analysis outside the purview of an interference. The record does not contain, and MasterImage did not provide, any evidence to show that the '198 application and the '243 application contained interfering claims. On the contrary, the record shows that the patent examiner was aware of the publication of the earlier filed '243 application when the Notice of Allowance was issued for the '198 application. (*See* JX-0006 at REALD_ITC0000430, 441, 460.) Further, the Patent Office never suggested an interference or requested an election of priority even though the patent examiners are under an obligation to conduct an interference search directed to inventive features of the broadest claim before issuing a notice of allowance. (*See* MPEP § 2304.01(a) ("When an application is in condition for allowance, an interference search must be made by performing a text search of the 'US-PGPUB' database in EAST or WEST directed to the comprehensive inventive features in the broadest claim.").)

C. Conclusion

The ALJ points out that the burden in proving inequitable conduct is extremely high given the consequences of such a finding and “courts must ensure that an accused infringer asserting inequitable conduct has met his burden on materiality and deceptive intent with clear and convincing evidence before exercising its discretion on whether to render a patent unenforceable.” *Star Scientific*, 537 F.3d at 1366. The ALJ finds that the MasterImage has failed to meet the high burden of proof set by *Therasense* as to intent and materiality as to the ’455, the ’296 and ’934 patents and, consequently, has failed to show that those patents are unenforceable due to inequitable conduct.

IV. DOMESTIC INDUSTRY

A. Applicable Law

In patent based proceedings under section 337, a complainant must establish that an industry “relating to the articles protected by the patent . . . exists or is in the process of being established” in the United States. 19 U.S.C. § 1337(a)(2). Under Commission precedent, the domestic industry requirement of Section 337 consists of a “technical prong” and an “economic prong.” *Certain Data Storage Systems and Components Thereof*, Inv. No. 337-TA-471, Initial Determination Granting EMC’s Motion No. 471-8 Relating to the Domestic Industry Requirement’s Economic Prong (unreviewed) at 3 (Public Version, October 25, 2002) The “economic prong” of the domestic industry requirement is satisfied when the economic activities set forth in subsections (A), (B), and/or (C) of subsection 337(a)(3) have taken place or are taking place with respect to the protected articles. *Certain Printing and Imaging Devices and Components Thereof*, Inv. No. 337-TA-690, Commission Op. at 25 (February 17, 2011)

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(“*Printing and Imaging Devices*”). With respect to the “economic prong,” 19 U.S.C. § 1337(a)(2) and (3) provide, in full:

(2) Subparagraphs (B), (C), (D), and (E) of paragraph (1) apply only if an industry in the United States, relating to the articles protected by the patent, copyright, trademark, mask work, or design concerned, exists or is in the process of being established.

(3) For purposes of paragraph (2), an industry in the United States shall be considered to exist if there is in the United States, with respect to the articles protected by the patent, copyright, trademark, mask work, or design concerned—

(A) significant investment in plant and equipment;

(B) significant employment of labor or capital; or

(C) substantial investment in its exploitation, including engineering, research and development, or licensing.

Id.

Given that these criteria are in the disjunctive, satisfaction of any one of them will be sufficient to meet the domestic industry requirement. *Certain Integrated Circuit Chipsets and Products Containing Same*, Inv. No. 337-TA-428, Order No 10 at 3, Initial Determination (Unreviewed) (May 4, 2000), citing *Certain Variable Speed Wind Turbines and Components Thereof*, Inv. No. 337-TA-376, Commission Op. at 15, USITC Pub. 3003 (Nov. 1996). The Commission has embraced a flexible, market-oriented approach to domestic industry, favoring case-by-case determination “in light of the realities of the marketplace” that encompass “not only the manufacturing operations” but may also include “distribution, research and development and sales.” *Certain Dynamic Random Access Memories*, Inv. No. 337-TA-242, USITC Pub. 2034, Commission Op. at 62 (Nov. 1987) (“*DRAMs*”).

To meet the technical prong, the complainant must establish that it practices at least one claim of the asserted patent. *Certain Point of Sale Terminals and Components Thereof*, Inv. No. 337-TA-524, Order No. 40 (April 11, 2005). The test for claim coverage for the purposes of the

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technical prong of the domestic industry requirement is the same as that for infringement. *Alloc, Inc. v. Int'l Trade Comm'n*, 342 F.3d 1361, 1375 (Fed. Cir. 2003); see also *Certain Doxorubicin and Preparations Containing Same*, Inv. No. 337-TA-300, Initial Determination at 109 (U.S.I.T.C., May 21, 1990) ("*Certain Doxorubicin*"), *aff'd*, Views of the Commission at 22 (October 31, 1990). "First, the claims of the patent are construed. Second, the complainant's article or process is examined to determine whether it falls within the scope of the claims." (*Id.*) As with infringement, the first step of claim construction is a question of law, whereas the second step of comparing the article to the claims is a factual determination. *Markman*, 52 F.3d at 976. The technical prong of the domestic industry can be satisfied either literally or under the doctrine of equivalents. *Certain Excimer Laser Systems for Vision Correction Surgery and Components Thereof and Methods for Performing Such Surgery*, Inv. No. 337-TA-419, Order No. 43 (July 30, 1999). The patentee must establish by a preponderance of the evidence that the domestic product practices one or more claims of the patent. See *Bayer*, 212 F.3d at 1247.

The Commission recently determined that the technical prong is not limited to subsections (A) and (B), but that any complainant seeking to establish a domestic industry under subsection (C) must also meet the technical prong. *Certain Computers and Computer Peripheral Devices, and Components Thereof, and Products Containing Same*, Inv. No. 337-TA-841, Comm'n Op. (December 20, 2013). Specifically, the Commission stated

Based on the *InterDigital* and *Microsoft* decisions, a complainant alleging the existence of a domestic industry under 19 U.S.C. §1337(a)(3)(C) must show the existence of articles. As discussed extensively earlier, the substantial investment, once protected articles have been shown, is in the exploitation of the intellectual-property rights, "including engineering, research and development, or licensing.

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Id. at 40. The Commission further stated, however, that “[w]e reject the [] production-driven requirement, which is in conflict with the plain language of the statute and its legislative history.”

Id.

Congress enacted 19 U.S.C. § 1337(a)(3) in 1988 as part of the Omnibus Trade and Competitiveness Act. *See Certain Plastic Encapsulated Integrated Circuits*, Inv. No. 337-TA-315, USITC Pub. No. 2574 (Nov. 1992), Initial Determination at 89 (October 16, 1991) (unreviewed in relevant part). The first two sub-paragraphs codified existing Commission practice. *See id.* at 89; *see also Certain Male Prophylactic Devices*, Inv. No. 337-TA-546, Commission Op. at 39 (June 29, 2007). Under Commission precedent, these requirements could be met by manufacturing the articles in the United States, *see, e.g., DRAMs*, Commission Op. at 61, or other related activities, *see Schaper Mfg. Co. v. U.S. Int’l Trade Comm’n*, 717 F.2d 1368, 1373 (Fed. Cir. 1983) (“[I]n proper cases, ‘industry’ may encompass more than the manufacturing of the patented item. . .”).

In addition to subsections (A) and (B), there is also subsection (C). “In amending section 337 in 1988 to include subsection (C), Congress intended to liberalize the domestic industry requirement so that it could be satisfied by all ‘holders of U.S. intellectual property rights who are engaged in activities genuinely designed to exploit their intellectual property’ in the United States.” *Certain Multimedia Display and Navigation Devices and Systems and Components Thereof, and Products Containing Same*, Inv. No. 337-TA-694, Commission Op. at 7 (August 8, 2011) (quoting *Certain Digital Processors and Digital Processing Systems, Components Thereof, and Products Containing Same*, Inv. No. 337-TA-559, Final Initial Determination at 93 (unreviewed in relevant part) (May 11, 2007)).

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In *Printing and Imaging Devices*, the Commission held that “under the statute, whether the complainant's investment and/or employment activities are ‘significant’ is not measured in the abstract or absolute sense, but rather is assessed with respect to the nature of the activities and how they are ‘significant’ to the articles protected by the intellectual property right.”

Printing and Imaging Devices, Commission Op. at 26. The Commission further stated that:

the magnitude of the investment cannot be assessed without consideration of the nature and importance of the complainant's activities to the patented products in the context of the marketplace or industry in question whether an investment is ‘substantial’ or ‘significant’ is context dependent. (*Id.* at 31.)

Indeed, the Commission has emphasized that “there is no minimum monetary expenditure that a complainant must demonstrate to qualify as a domestic industry under the ‘substantial investment’ requirement” of section 337(a)(3)(C). *Certain Stringed Musical Instruments and Components Thereof*, Inv. No. 337-TA-586, Commission Op. at 25 (May 16, 2008). Moreover, the Commission has stated that the complainant need not “define or quantify the industry itself in absolute mathematical terms.” *Id.* at 26.

Section 337(a)(3)(C) provides for domestic industry based on “substantial investment” in the enumerated activities, including licensing of a patent. *See Certain Digital Processors and Digital Processing Systems, Components Thereof, and Products Containing Same*, Inv. No. 337-TA-559, Initial Determination at 88 (May 11, 2007) (“*Certain Digital Processors*”). Mere ownership of the patent is insufficient to satisfy the domestic industry requirement. *Certain Digital Processors* at 93. (citing the Senate and House Reports on the Omnibus Trade and Competitiveness Act of 1988, S.Rep. No. 71). However, entities that are actively engaged in licensing their patents in the United States can meet the domestic industry requirement. *Certain Digital Processors* at 93. The complainant must receive revenue, *e.g.* royalty payments, from

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its licensing activities. *Certain Digital Processors*, at 93-95 (“Commission decisions also reflect the fact that a complainant’s receipt of royalties is an important factor in determining whether the domestic industry requirement is satisfied . . . [t]here is no Commission precedent for the establishment of a domestic industry based on licensing in which a complainant did not receive any revenue from alleged licensing activities. In fact, in previous investigations in which a complainant successfully relied solely on licensing activities to satisfy section 337(a)(3), the complainant had licenses yielding royalty payments.”) (citations omitted). *See also Certain Video Graphics Display Controllers and Products Containing Same*, Inv. No. 337-TA-412, Initial Determination at 13 (May 14, 1999) (“*Certain Video Graphics Display Controllers*”); *Certain Integrated Circuit Telecommunication Chips and Products Containing Same Including Dialing Apparatus*, Inv. No. 337-TA-337, U.S.I.T.C. Pub. No. 2670, Initial Determination at 98 (March 3, 1993) (“*Certain Integrated Circuit Telecommunication Chips*”); *Certain Zero-Mercury-Added Alkaline Batteries, Parts Thereof and Products Containing Same*, Inv. No. 337-TA-493, Initial Determination at 142 (June 2, 2004) (“*Certain Zero-Mercury-Added Alkaline Batteries*”); *Certain Semiconductor Chips*, Order No. 13 at 6 (January 24, 2001); *Certain Digital Satellite System DSS Receivers and Components Thereof*, Inv. No. 337-TA-392, Initial and Recommended Determinations at 11 (December 4, 1997) (“*Certain Digital Satellite System DSS Receivers*”).

In *Certain Multimedia Display & Navigation Devices & Systems, Components Thereof, & Products Containing Same*, Inv. No. 337-TA-694, Comm’n Op. (Aug. 8, 2011) (“*Navigation Devices*”), the Commission stated that a complainant seeking to rely on licensing activities must satisfy three requirements: (1) the investment must be “an investment in the exploitation of the asserted patent;” (2) the investment must relate to licensing; and (3) the investment “must be

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domestic, *i.e.*, it must occur in the United States.” *Id.* at 7-8. The Commission stated that “[o]nly after determining the extent to which the complainant’s investments fall within these statutory parameters can we evaluate whether complainant’s qualifying investments are ‘substantial,’ as required by the statute.” *Id.* at 8.

Under the first of the three requirements, the complainant must show a nexus between the licensing activity and the asserted patent. *Id.* at 9. When the asserted patent is part of a patent portfolio, and the licensing activities relate to the portfolio as a whole, the Commission requires that the facts be examined to determine the strength of the nexus between the asserted patent and the licensing activities. *Id.* The Commission provided a non-exhaustive list of factors to consider, such as (1) whether the licensee’s efforts relate to “an article protected by” the asserted patent under Section 337 (a)(2)-(3); (2) the number of patents in the portfolio; (3) the relative value contributed by the asserted patent to the portfolio; (4) the prominence of the asserted patent in licensing discussions, negotiations, and any resulting licensing agreement; and (5) the scope of technology covered by the portfolio compared to the scope of the asserted patent. *Id.* at 9-10. The Commission explained that the asserted patent may be shown to be particularly important or valuable within the portfolio where there is evidence that: (1) it was discussed during licensing negotiations; (2) it has been successfully litigated before by the complainant; (3) it is related to a technology industry standard; (4) it is a base patent or pioneering patent; (5) it is infringed or practiced in the United States; or (6) the market recognizes the patent’s value in some other way. *Id.* at 10-11.

Once a complainant’s investment in licensing the asserted patent in the United States has been assessed in the manner described above, the next inquiry is whether the investment is “substantial.” 19 U.S.C. § 1337(a)(3)(C). The Commission takes “a flexible approach whereby

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a complainant whose showing on one or more of the three section 337(a)(3)(C) requirements is relatively weak may nevertheless establish that its investment is ‘substantial’ by demonstrating that its activities and/or expenses are of a large magnitude.” *Multimedia Display and Navigation Devices*, Comm’n Op. at 15. The Commission has indicated that whether an investment is “substantial” may depend on:

- (1) the nature of the industry and the resources of the complainant;
- (2) the existence of other types of “exploitation” activities;
- (3) the existence of license-related “ancillary” activities;
- (4) whether complainant’s licensing activities are continuing; and
- (5) whether complainant’s licensing activities are the type of activities that are referenced favorably in the legislative history of section 337(a)(3)(C).

Id. at 15-16. The complainant’s return on its licensing investment (or lack thereof) may also be circumstantial evidence of substantiality. *Id.* at 16. In addition, litigation expenses may be evidence of the complainant’s investment, but “should not automatically be considered a ‘substantial investment in . . . licensing,’ even if the lawsuit happens to culminate in a license.” *John Mezzalingua Assocs., Inc. v. Int’l Trade Comm’n*, 660 F.3d 1322 (Fed. Cir. 2011).

B. Economic Prong

On September 25, 2015, the Commission determined to review-in-part an Initial Determination (“ID”) (Order No. 9 (August 20, 2015)) granting-in-part RealD’s motion for summary determination that a domestic industry exists. While the Commission found that there are genuine issues of material fact as to whether RealD’s investments in equipment are significant and therefore reversed the ALJ’s summary determination with respect to RealD’s investment in equipment, the Commission determined not to review the remaining findings in the ID including the findings that RealD has shown that it satisfies the economic prong of the

domestic industry requirement through its significant investments in plant, significant investments in labor, and substantial investments in engineering, research, and development. (See Notice of Commission Decision to Review-In-Part An Initial Determination Granting-In-Part a Motion for a Summary Determination that a Domestic Industry Exists, and, On Review, to Reverse an Issue (September 25, 2015); see also Order No. 9 (Aug. 20, 2015).) Accordingly, RealD has satisfied the economic prong of the domestic industry requirement under 19 U.S.C. § 1337(a)(3) for all asserted patents.

C. Technical Prong⁵

1. '455 Patent: Claim 1

RealD argues that each limitation of claim 1 of the '455 patent is practiced by its XL and XLW products as shown by the testimony from Dr. Hesselink and from the lead designer of the Domestic Industry Products, Dr. Miller H. Schuck, III, as well as product documentation. (CIB at 40.) Further, RealD contends that MasterImage does not advance any meaningful rebuttal to RealD's evidence that claim 1 of '455 patent is practiced by its XL and XLW products, except to argue that the preamble requires that the claimed apparatus includes a projector. (*Id.*)

MasterImage contends that the preamble of claim 1 of the '455 patent is limiting and that RealD's products do not satisfy the preamble because RealD's products are after the projector add-on products that do not themselves generate images. (RIB at 51.) Thus, MasterImage argues that the RealD products do not satisfy any of the claims of the '455 patent and therefore RealD does not satisfy the technical prong of the domestic industry requirement with respect to the '455 patent. (*Id.*)

⁵ For each of its patents, RealD sets forth arguments and evidence that the domestic industry products practice multiple claims of the patent. RealD is only required to show that the domestic industry products practice one (1) claim of each asserted patent. *Microsphere Adhesives*, 337-TA-366, Comm'n Op. at 16 (Jan. 16, 1996).

- a. **Claim 1: “An apparatus for projecting stereoscopic images, comprising:”**

As explained *supra* in Section IV.B.3, the preamble is not a limitation. As such, the RealD XL and XLW products do not need to satisfy the preamble of claim 1 of the '455 patent.

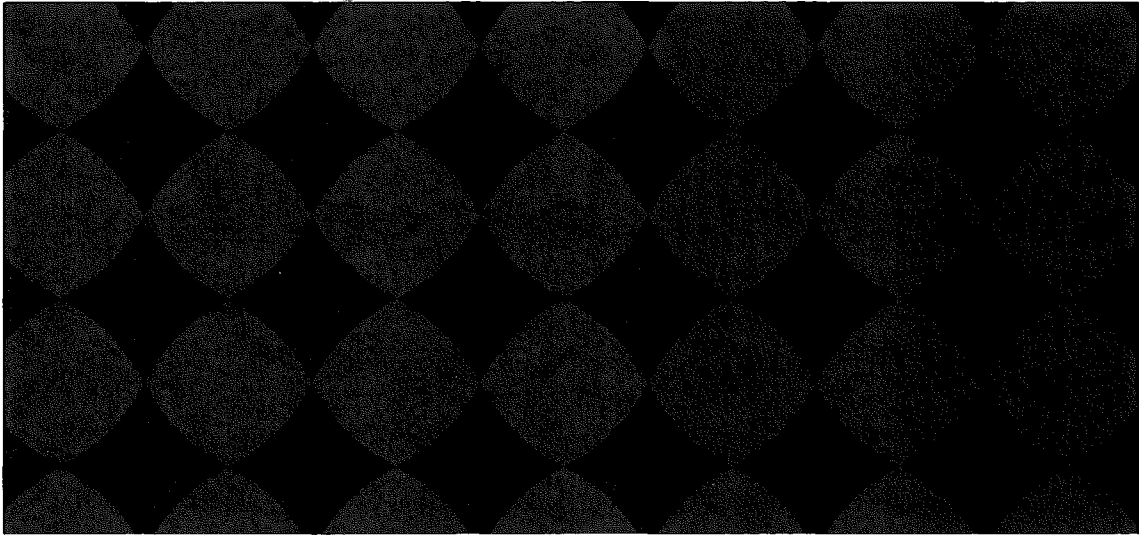
- b. **Claim 1: “a polarizing splitting element configured to receive image light energy and split the image light energy received into a primary path of light energy transmitted along a primary path and a secondary path of light energy transmitted along a secondary path”**

RealD contends that this claim limitation is met by the [REDACTED]

[REDACTED]

The ALJ finds that RealD’s XL and XLW products meet this limitation of claim 1 of the '455 patent because these products [REDACTED]

[REDACTED]



[Redacted line of text]

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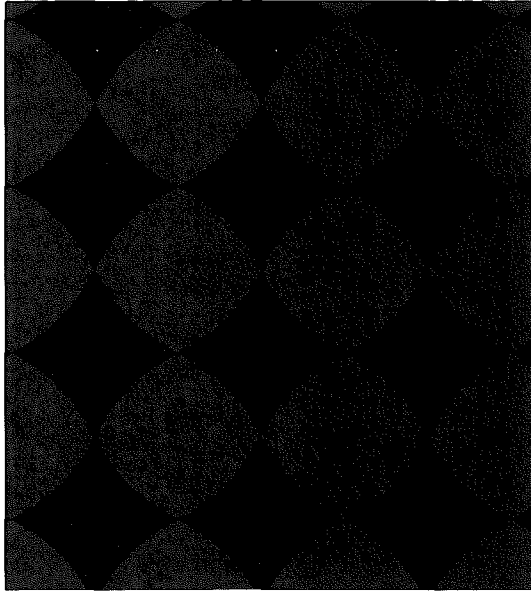
[Redacted line of text]

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[Redacted line of text]



[REDACTED]

[REDACTED]

[REDACTED] Accordingly, the ALJ finds that RealD's XL and XLW products meet this limitation of claim 1 of the '455 patent.

- c. **Claim 1: "a reflector configured to receive path light energy from one of primary path energy and secondary path light energy and to direct said path light energy toward a surface"**

The ALJ finds that RealD's XL and XLW products meet this limitation of claim 1 of the '455 patent because the record shows the XL and XLW products [REDACTED]

[REDACTED]

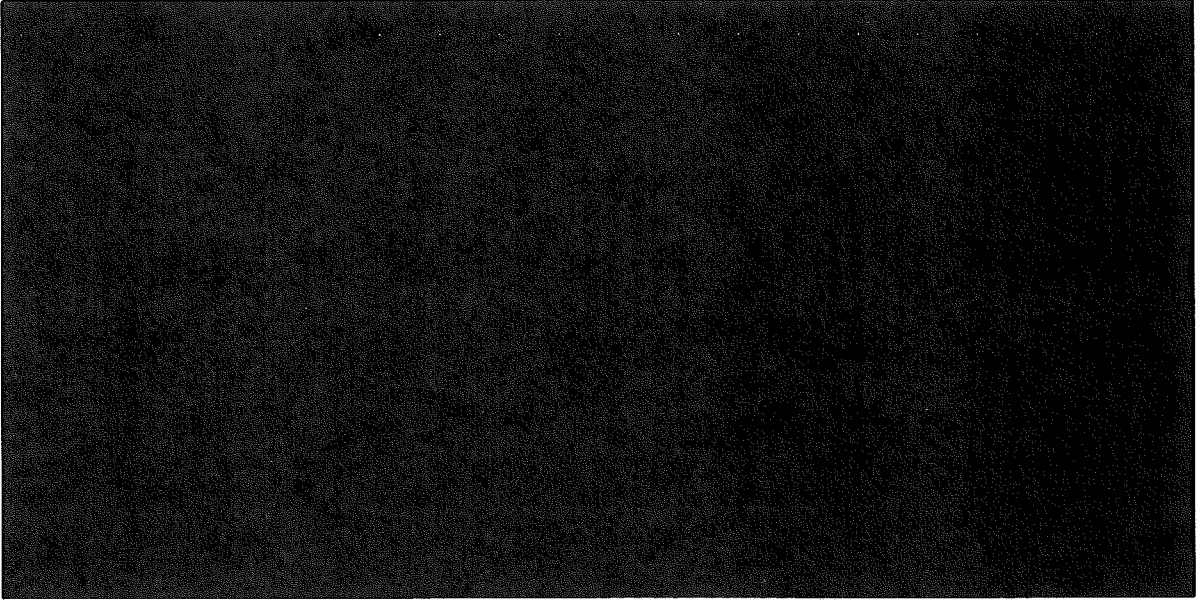
[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]



[Redacted line of text]

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Accordingly, the ALJ finds that RealD's XL and XLW products meet this limitation of claim 1 of the '455 patent.



 Accordingly, the ALJ finds that RealD's XL and XLW products meet this limitation of claim 1 of the '455 patent.

Therefore, the ALJ finds that RealD has satisfied the technical prong of the domestic industry requirement for the '455 patent because RealD's XL and XLW products satisfy all the limitations of claim 1 and therefore practice claim 1 of the '455 patent.

2. '296 Patent: Claim 1

RealD argues that each limitation of claim 1 of the '296 patent is practiced by its XL-DP and XLW-DP products as shown by the testimony from Dr. Hesselink and from the lead designer of the Domestic Industry Products, Dr. Miller H. Schuck, III, as well as product documentation. (CIB at 103.) Further, RealD contends that MasterImage does not advance any meaningful rebuttal to RealD's evidence that claim 1 of '296 patent is practiced by its XL-DP and XLW-DP products, except to argue that the preamble requires that the claimed apparatus includes projectors. (*Id.*)

MasterImage contends that the preamble of claim 1 of the '296 patent is limiting and that RealD's products do not satisfy the preamble because RealD's products are after the projector add-on products that do not themselves generate images. (RIB at 51.) Thus, MasterImage argues that the RealD products do not satisfy any of the claims of the '296 patent and therefore RealD does not satisfy the technical prong of the domestic industry requirement with respect to the '296 patent. (*Id.*)





a. Claim 1: “Apparatus for projecting stereoscopic images, comprising:”

As explained *supra* in Section IV.C.3, the preamble is not a limitation. As such, the RealD XL-DP and XLW-DP products do not need to satisfy the preamble of claim 1 of the '296 patent.

b. Claim 1: “a first polarizing splitting element configured to receive first image light energy and split the first image light energy received along a first primary path and along a first secondary path” & “a second polarizing splitting element configured to receive second image light energy and split the second image light energy received along a second primary path and along a second secondary path”

Because the XL-DP [REDACTED] and this claim limitation includes two polarizing splitting element limitations which are the same as the one polarizing splitting element limitation in the '455, the ALJ finds that the XL-DP and the

XLW-DP products satisfy this limitation for the same reasons as explained *supra* in Section VIII.C.1.b. for the XL and XLW products.

- c. **Claim 1: “a first reflector configured to receive one of first primary path of light energy and first secondary path of light energy and to reflect the one of first primary path of light energy and first secondary path of light energy toward a surface” & “a second reflector configured to receive one of second primary path of light energy and second secondary path of light energy and to reflect the one of second primary path of light energy and second secondary path of light energy toward a surface”**

Because the XL-DP [REDACTED] and this claim limitation includes two reflector limitations which are the same as the one reflector limitation in the '455, the ALJ finds that the XL-DP and the XLW-DP products satisfy this limitation for the same reasons as explained *supra* in Section VIII.C.1.c. for the XL and XLW products.

- d. **Claim 1: “a first rotator configured to receive one of first primary path of light energy and first secondary path of light energy and to rotate the one of first primary path of light energy and first secondary path of light energy” & “a second rotator configured to receive one of second primary path of light energy and second secondary path of light energy and to rotate the one of second primary path of light energy and second secondary path of light energy”**

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Accordingly, the ALJ finds that the XL-DP and the XLW-DP products satisfy this limitation.

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Therefore, the ALJ finds that RealD has satisfied the technical prong of the domestic industry requirement for the '296 patent because RealD's XL-DP and XLW-DP products satisfy all the limitations of claim 1 and therefore practice claim 1 of the '296 patent.

3. '934 Patent: Claim 1

RealD argues that the XL and XLW practice independent claim 1 of the '934 Patent. (CIB at 124.) MasterImage argues that these products do not meet the Preamble limitation of claim 1. (RIB at 50-51.) However, as set forth *supra* in Sections IV.B.3 and IV.D.3, the ALJ found that the Preamble was not limiting. As such, MasterImage's arguments fail.

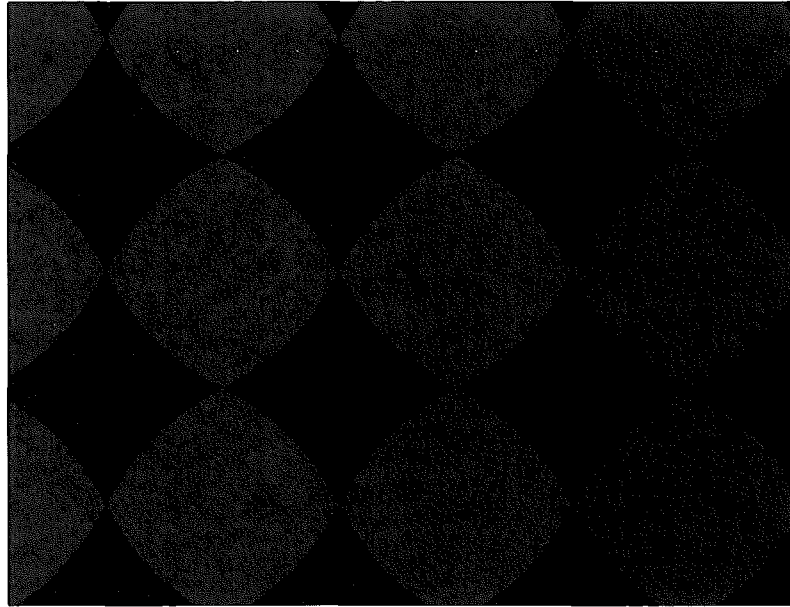
a. "A stereoscopic system"

As set forth *supra*, the preamble is not a limitation so no comparison between the preamble and the XL and XLW products is necessary.

b. "a polarization beam splitter (PBS) operable to direct first light bundles having a first state of polarization (SOP) along a first light path, and direct second light bundles having a second SOP along a second light path"

This claim limitation is met by the XL and XLW as set forth *supra* in Section VIII.C.1.





[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

- c. **“a polarization rotator located on the second light path, the polarization rotator being operable to translate the second SOP to the first SOP”**

The evidence shows that the modulator in the XL and XLW products meet this limitation.

Specifically, the evidence shows that the XL [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]



Therefore, the ALJ finds that RealD has shown by a preponderance of the evidence that the XL and XLW products meet claim 1 of the '934 patent.

V. CONCLUSIONS OF LAW

1. The Commission has personal jurisdiction over the parties and subject-matter and *in rem* jurisdiction over the accused products.
2. The importation or sale requirement of section 337 is satisfied.
3. MasterImage is liable for direct infringement of the asserted claims of the '455 patent, the asserted claims of the '296 patent and asserted claims of the '934 patent.
4. The asserted claims of the '455 patent satisfy the written description and the definiteness requirements of 35 U.S.C. § 112.
5. The '455 patent, the '296 patent and the '934 patent are not invalid under 35 U.S.C. § 102 for anticipation.
6. The '455 patent, the '296 patent and the '934 patent are not invalid under 35 U.S.C. § 103 for obviousness.
7. The '296 patent properly named all of the inventors of that patent.
8. The '455 patent, the '296 patent and the '934 patent are not unenforceable due to inequitable conduct.
9. The domestic industry requirement for the '455, '296 patent and '934 patents has been satisfied.
10. It has been established that a violation exists of section 337 for the asserted claims of the '455 patent, the '296 patent and the '934 patent.

VI. INITIAL DETERMINATION AND ORDER

Based on the foregoing, it is the INITIAL DETERMINATION of the ALJ that a violation of section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337, has occurred in the importation into the United States, the sale for importation, or the sale within the United States after importation of certain three-dimensional cinema systems and components thereof by reason of infringement of the asserted claims of U.S. Patent No. 7,857,455, U.S. Patent No. 7,959,296, and U.S. Patent No. 8,220,934.

Further, this Initial Determination, together with the record of the hearing in this investigation consisting of:

- (1) the transcript of the hearing, with appropriate corrections as may hereafter be ordered, and
- (2) the exhibits received into evidence in this investigation, as listed in the attached exhibit lists in Appendix A,

are CERTIFIED to the Commission. In accordance with 19 C.F.R. § 210.39(c), all material found to be confidential by the undersigned under 19 C.F.R. § 210.5 is to be given *in camera* treatment.

The Secretary shall serve a public version of this ID upon all parties of record and the confidential version upon counsel who are signatories to the Protective Order (Order No. 1.) issued in this investigation.

VII. RECOMMENDED DETERMINATION ON REMEDY AND BOND

A. Remedy and Bonding

The Commission's Rules provide that subsequent to an initial determination on the question of violation of section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337, the administrative law judge shall issue a recommended determination containing findings of fact and recommendations concerning: (1) the appropriate remedy in the event that the Commission finds a violation of section 337, and (2) the amount of bond to be posted by respondents during Presidential review of Commission action under section 337(j). *See* 19 C.F.R. § 210.42(a)(1)(ii).

1. Limited Exclusion Order

Under Section 337(d), the Commission may issue either a limited or a general exclusion order. A limited exclusion order ("LEO") directed to respondents' infringing products is among the remedies that the Commission may impose, as is a general exclusion order that would apply to all infringing products, regardless of their manufacturer. *See* 19 U.S.C. § 1337(d).

RealD argues that a LEO should be issued if a violation is found. (CIB at 146.) Specifically, "RealD seeks a limited exclusion order prohibiting entry of the Accused Products and variations and components thereof imported, sold for importation, or sold in the U.S. following importation by or on behalf of Respondents that infringe the Asserted Patents." (*Id.* at 146-147.) "The components that RealD seeks to exclude include liquid crystal panels, three-way beam optical heads, actuators, control boxes, floor stands, polarization modulators, prisms used as reflectors, black boxes/casings that house the elements of the cinema system, and low vibration cases used to ship components of the Accused Products." (*Id.* at 147.) RealD contends that MasterImage should not be permitted to create a loophole in any limited exclusion order that

could be exploited to ship key components into the United States for purposes of assembling the Accused Products. (CRB at 119.)

MasterImage argues that any LEO should include a certification provision which excludes MasterImage's cinema related products that are not accused in this investigation such as 3-D glasses, and the Wave and Clarity products. (RIB at 140.) Additionally, MasterImage contends that any LEO should be narrowly tailored to cover just its polarization conversion system. (*Id.* at 141.)

Should the Commission find a violation, the ALJ recommends that the Commission issue a LEO against MasterImage's accused products, namely Horizon 3D, 3D S, 3D Dual, and 3D S Dual, and [REDACTED] and any components thereof.⁶

2. Cease and Desist Order

RealD argues that the a cease-and-desist order is appropriate and warranted to prevent further injury to RealD and to deter MasterImage from engaging in the unlawful importation and/or sale of infringing products in the United States. (CIB at 148.) Further, RealD contends that "[t]here is no dispute that the Accused Products have been imported, and continue to be imported, in the U.S. (*Id.*) RealD also submits that a commercially significant inventory of the infringing articles—[REDACTED]—are within the U.S. (*Id.*) RealD contends that MasterImage's [REDACTED] inventory is commercially significant as compared to its domestic sales of the accused products because MasterImage sold approximately [REDACTED] of the

⁶ Such components include the following: liquid crystal panels, a three-way beam optical head, an actuator, a control box, a floor stand, a polarization modulator, a prism used as a reflector, the black box/casing that houses the elements of the cinema system, and the low vibration case used to ship components of the accused products as the record shows these components are vital, critical, and fundamental to the operation and shipping of the accused products. (*See* RX-0106.0011 and RX-0106.0012 (listing the key components included and shipped with the accused products).)

accused products to customers in the United States [REDACTED], and [REDACTED] [REDACTED] for a total of [REDACTED] sold to customers in the United States. (*Id.*) [REDACTED] (RIB at 141.) Additionally, [REDACTED] (*Id.*) Further, MasterImage states that it “has title to [REDACTED] [REDACTED] are not classic “inventory” and are not commercially significant.” (*Id.*) As such, MasterImage argues that it cannot circumvent an exclusion order with these [REDACTED] and therefore a CDO should not be issued. (*Id.* at 140-141.)

The ALJ recommends the issuance of a CDO against MasterImage. The ALJ finds that MasterImage’s inventory of [REDACTED] to be commercially significant in view of MasterImage’s total sales of [REDACTED] within the United States. (*See* RIB at 141; *see also* RX-0243C (Lohan Witness Statement) at Q/A 21-26; RX-0591C (Vander Veen Witness Statement) at Q/A 220-223.) Additionally, the ALJ finds MasterImage’s [REDACTED] or not “classic” inventory argument is unpersuasive. It is clear that based on the total number of sales of units by MasterImage, *i.e.*, [REDACTED] in its possession is commercially significant for Respondents.

3. Bond During Presidential Review Period

The Administrative Law Judge and the Commission must determine the amount of bond to be required of a respondent, pursuant to section 337(j)(3), during the 60-day Presidential review period following the issuance of permanent relief, in the event that the Commission determines to issue a remedy. The purpose of the bond is to protect the complainant from any injury. 19 C.F.R. § 210.42(a)(1)(ii), § 210.50(a)(3).

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RealD argues that a bond amount of 100% is appropriate because a bond rate cannot be readily calculated using a reasonable royalty or a price-differential analysis. (CIB at 149.) Specifically, RealD contends that a bond rate cannot be readily calculated using a price-differential analysis, given the significant differences between RealD and MasterImage's business models and pricing strategies as [REDACTED]

[REDACTED]. (*Id.*) Additionally, RealD submits that the bond rate cannot be readily calculated using a reasonable-royalty analysis, since there are no comparable licenses to use in conducting a reasonable-royalty analysis. (*Id.*) RealD also points out that it can lose the opportunity to secure [REDACTED] based on its domestic industry products should MasterImage sell any of its accused products in the United States and thereby RealD is likely to be injured by any future sales of the accused products. (CRB at 121.)

MasterImage argues that no bond should be imposed during the Presidential Review Period because the evidence does not suggest that RealD is likely to be injured as a result of any sale of the accused products during the 60-day Presidential Review Period. (RIB at 142.) MasterImage contends that RealD simply assumed a 100% bond after concluding that the price differential and reasonable royalty are difficult to calculate. (*Id.*)

Should the Commission find a violation, the ALJ recommends a bond rate of 100%. The record shows that any sales of the accused products in the United States would likely injure RealD because each accused product sold would adversely impact RealD's ability to secure a multi-year license agreement. (*See* Sec. Corr. CX-0625C (Bakewell Witness Statement) at Q/A 172; *see also* Hearing Tr. (Lewis), Vol. 1, 82:24 – 83:6 [REDACTED])

[REDACTED]

[REDACTED]

[REDACTED] Next, the record shows that a bond rate cannot be calculated using a price differential due to the significant differences between RealD and MasterImage's business models and pricing strategies. (See Sec. Corr. CX-0625C (Bakewell Witness Statement) at Q/A 172 [REDACTED]; see also Hearing Tr. (Bakewell), Vol. 3, 361:23 – 361:3 [REDACTED]

[REDACTED]

[REDACTED] Additionally, the record shows a bond rate cannot be readily calculated using a reasonable royalty. (See Sec. Corr. CX-0625C (Bakewell Witness Statement) at Q/A 175 [REDACTED]; see also Hearing Tr. (Bakewell), Vol. 3, 361:23 – 361:3 [REDACTED]

[REDACTED] Last, the record shows that MasterImage did not put forth any evidence to show how a price differential or a reasonable royalty would be calculated. (See RIB at 142-143; see also RRB at 72.)

B. Conclusion

In accordance with the discussion of the issues contained herein, it is the RECOMMENDED DETERMINATION (“RD”) of the ALJ that should the Commission find a

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violation, the Commission issue a LEO and CDO against MasterImage. The ALJ also recommends a bond rate of 100%.

Within seven days of the date of this document, each party shall submit to the office of the Administrative Law Judge a statement as to whether or not it seeks to have any portion of this document deleted from the public version. The parties' submissions must be made by hard copy by the aforementioned date.

Any party seeking to have any portion of this document deleted from the public version thereof must submit to this office (1) a copy of this document with red brackets indicating any portion asserted to contain confidential business information by the aforementioned date and (2) a list specifying where said redactions are located. The parties' submission concerning the public version of this document need not be filed with the Commission Secretary.

SO ORDERED.

A handwritten signature in black ink, appearing to read 'T. Essex', written over a horizontal line.

Theodore R. Essex
Administrative Law Judge

**CERTAIN THREE-DIMENSIONAL
CINEMA SYSTEMS AND
COMPONENTS THEREOF**

Inv. No. 337-TA-939

PUBLIC CERTIFICATE OF SERVICE

I, Lisa R. Barton, hereby certify that the attached **INITIAL DETERMINATION (PUBLIC VERSION)** has been served by hand upon the following parties as indicated, on January 7, 2016.



Lisa R. Barton, Secretary
U.S. International Trade Commission
500 E Street, SW, Room 112
Washington, DC 20436

On Behalf of Complainants RealD Inc.:

Kevin M. O'Brien, Esq.
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- () Via Express Delivery
- () Via First Class Mail
- () Other: _____

On Behalf of Respondents MasterImage 3D, Inc. and MasterImage 3D Asia, LLC:

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