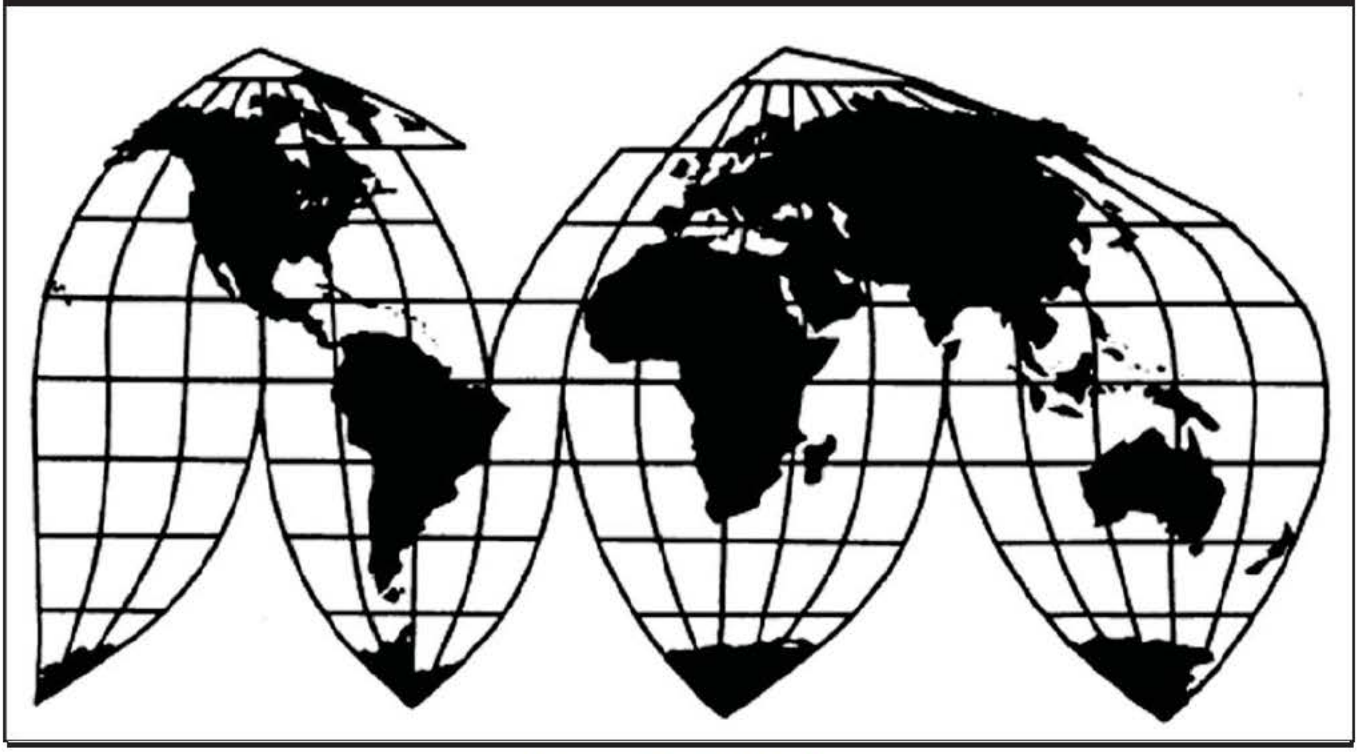
In the Matter of

CERTAIN BIOMETRIC SCANNING DEVICES, COMPONENTS THEREOF, ASSOCIATED SOFTWARE, AND PRODUCTS CONTAINING THE SAME

Investigation No. 337-TA-720

Publication 4366 **February 2013**

U.S. International Trade Commission



Washington, DC 20436

U.S. International Trade Commission

COMMISSIONERS

Deanna Tanner Okun, Chairman
Irving A. Williamson, Vice Chairman
Charlotte R. Lane, Commissioner
Daniel R. Pearson, Commissioner
Shara L. Aranoff, Commissioner
Dean A. Pinkert, Commissioner

Address all communications to
Secretary to the Commission
United States International Trade Commission
Washington, DC 20436

U.S. International Trade Commission

Washington, DC 20436
www.usitc.gov

In the Matter of

CERTAIN BIOMETRIC SCANNING DEVICES, COMPONENTS THEREOF, ASSOCIATED SOFTWARE, AND PRODUCTS CONTAINING THE SAME

Investigation No. 337-TA-720

Publication 4366

February 2013

UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C.

In the Matter of

CERTAIN BIOMETRIC SCANNING DEVICES, COMPONENTS THEREOF, ASSOCIATED SOFTWARE, AND PRODUCTS CONTAINING THE SAME

Investigation No. 337-TA-720

NOTICE OF COMMISSION DECISION TO MODIFY A FINAL INITIAL DETERMINATION FINDING A VIOLATION OF SECTION 337; ISSUANCE OF A LIMITED EXCLUSION AND A CEASE AND DESIST ORDER; AND 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 determined to modify a final initial determination ("ID") of the presiding administrative law judge ("ALJ") finding a violation of section 337 by respondents in the above-captioned investigation, and has issued a limited exclusion order directed against products of respondents Suprema, Inc. ("Suprema") of Gyeonggi, Korea and Mentalix, Inc. ("Mentalix") of Plano, Texas, and a cease and desist order directed against Mentalix.

FOR FURTHER INFORMATION CONTACT: Clint Gerdine, Esq., Office of the General Counsel, U.S. International Trade Commission, 500 E Street, S.W., Washington, D.C. 20436, telephone (202) 708-2310. 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 at *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 June 17, 2010 based on a complaint filed on May 11, 2010, by Cross Match Technologies, Inc. ("Cross Match") of Palm Beach Gardens, Florida. 75 *Fed. Reg.* 34482-83. The complaint, as amended on May 26, 2010, 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 biometric scanning devices, components thereof, associated software, and products containing the same by reason of infringement of certain claims of U.S. Patent Nos. 5,900,993 ("the '993 patent"); 7,203,344 ("the '344 patent");

7,277,562 ("the '562 patent"); and 6,483,932 ("the '932 patent"). The complaint further alleges that an industry in the United States exists as required by subsection (a)(2) of section 337, and names two respondents, Suprema and Mentalix.

On November 10, 2010, the Commission issued notice of its determination not to review the ALJ's ID granting Cross Match's motion to amend the complaint by adding allegations of infringement as to claims 5-6, 12, and 30 of the '562 patent, and claims 7, 15, 19, and 45 of the '344 patent. On December 27, 2010, the Commission issued notice of its determination not to review the ALJ's ID granting Cross Match's motion to terminate the investigation as to claims 6-8, 13-15, and 19-21 of the '932 patent (eliminating this patent from the investigation); claims 13 and 16 of the '993 patent; claims 4, 15, 30, 32, and 44 of the '344 patent; and claim 2 of the '562 patent based on withdrawal of these claims from the complaint. On March 18, 2011, the Commission issued notice of its determination not to review the ALJ's ID granting Cross Match's motion for summary determination that it satisfies the economic prong of the domestic industry requirement.

On June 17, 2011, the ALJ issued his final ID finding a violation of section 337 by reason of infringement of one or more of claims 10, 12, and 15 of the '993 patent by the imported devices. The ALJ also found a violation of section 337 by reason of infringement of claim 19 of the '344 patent. The ALJ found no violation of section 337 with respect to the '562 patent. He also issued his recommendation on remedy and bonding during the period of Presidential review. On July 5, 2011, Cross Match, respondents, and the Commission investigative attorney ("IA") each filed a petition for review of the final ID; and on July 13, 2011, each filed a response to the opposing petitions.

On August 18, 2011, the Commission determined to review the ALJ's finding of a violation of section 337 based on infringement of claim 19 of the '344 patent. The determinations made in the final ID that were not reviewed became final determinations of the Commission by operation of rule. *See* 19 U.S.C. § 210.42(h).

The Commission requested briefing on certain questions concerning the issues under review and requested written submissions on the issues of remedy, the public interest, and bonding from the parties and interested non-parties. 76 *Fed. Reg.* 52970-71 (August 24, 2011).

On August 30 and September 8, 2011, respectively, complainant Cross Match, respondents, and the IA each filed a brief and a reply brief on the issues for which the Commission requested written submissions.

Having reviewed the record in this investigation, including the final ID and the parties' written submissions, the Commission has determined to: (1) modify-in-part the final ID and issue an Opinion supplementing the ID's analysis concerning its finding that the accused scanners infringe claim 19 of the '344 patent; and (2) affirm all other findings of the ID underlying the issue under review. Specifically, the Commission has determined that respondent Mentalix directly infringes claim 19 of the '344 patent, and that respondent Suprema indirectly infringes claim 19,

via induced infringement, but does not infringe claim 19 via contributory infringement. These actions result in a finding of a violation of section 337 with respect to claim 19 of the '344 patent.

Further, the Commission has made its determination on the issues of remedy, the public interest, and bonding. The Commission has determined that the appropriate form of relief is both: (1) a limited exclusion order prohibiting the unlicensed entry of biometric scanning devices, components thereof, associated software, and products containing the same that infringe one or more of claims 10, 12, and 15 of the '993 patent and claim 19 of the '344 patent where the infringing scanning devices are manufactured abroad by or on behalf of, or are imported by or on behalf of, Suprema or Mentalix, or any of their affiliated companies, parents, subsidiaries, licensees, contractors, or other related business entities, or successors or assigns; and (2) a cease and desist order prohibiting Mentalix, Inc. from conducting any of the following activities in the United States: importing, selling, marketing, advertising, distributing, offering for sale, transferring (except for exportation), and soliciting U.S. agents or distributors for, biometric scanning devices, components thereof, associated software, and products containing the same that infringe one or more of claims 10, 12, and 15 of the '993 patent and claim 19 of the '344 patent.

The Commission further determined that the public interest factors enumerated in sections 337(d)(1), (f)(1) (19 U.S.C. §§ 1337(d)(1), (f)(1)) do not preclude issuance of the limited exclusion or cease and desist order. Finally, the Commission determined that a bond of 100 percent of the entered value of the covered products is required to permit temporary importation during the period of Presidential review (19 U.S.C. §c1337(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 Commission has terminated this investigation. 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 sections 210.42, 210.45, and 210.50 of the Commission's Rules of Practice and Procedure (19 C.F.R. §§ 210.42, 210.45, 210.50).

By order of the Commission.

James R. Holbein
Secretary to the Commission

Issued: October 24, 2011

UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C.

In the Matter of

CERTAIN BIOMETRIC SCANNING DEVICES, COMPONENTS THEREOF, ASSOCIATED SOFTWARE, AND PRODUCTS CONTAINING THE SAME

Inv. No. 337-TA-720

LIMITED EXCLUSION ORDER

The Commission has determined that there is a violation of Section 337 of the Tariff Act of 1930 (19 U.S.C. § 1337) in the unlawful importation, sale for importation, and sale after importation by Respondents Suprema, Inc. ("Suprema") and Mentalix, Inc. ("Mentalix") of certain biometric scanning devices, components thereof, associated software, and products containing the same, that infringe one or more of claims 10, 12, and 15 of U.S. Patent No. 5,900,993 ("the '993 patent") and claim 19 of U.S. Patent No. 7,203,344 ("the '344 patent") .

Having reviewed the record in this investigation, including the written submissions of the parties, the Commission has made its determinations on the issues of remedy, the public interest, and bonding. The Commission has determined that the appropriate form of relief is a limited exclusion order prohibiting entry of infringing biometric scanning devices, components thereof, associated software, and products containing the same, and that are manufactured abroad by or on behalf of, or imported by or on behalf of Suprema or Mentalix. The Commission has also determined that the appropriate form of relief includes a cease and desist order directed against Respondent Mentalix.

The Commission has also determined that the public interest factors enumerated in 19 U.S.C. § 1337(d) do not preclude issuance of the limited exclusion order or cease and desist order, and that there shall be a 100 percent bond during the Presidential review period.

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

1. Biometric scanning devices, components thereof, associated software, and products containing the same, that infringe one or more of claims 10, 12, and 15 of the '993 patent and claim 19 of the '344 patent and that are manufactured abroad by or on behalf of, or imported by or on behalf of, Suprema or Mentalix or any of their affiliated companies, parents, subsidiaries, assigns, or other related business entities are excluded from entry into the United States for consumption, entry for consumption from a foreign-trade zone, or withdrawal from a warehouse for consumption, for the remaining terms of the patents, except under license of the patent owner or as provided by law.

2. Notwithstanding paragraph 1 of this Order, the aforesaid biometric scanning devices, components thereof, associated software, and products containing the same 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 the products pursuant to subsection (j) of section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337(j), and the Presidential Memorandum for the United States Trade Representative of July 21, 2005 (70 *Fed. Reg.* 43251), from the day after this Order is received by the United States Trade Representative and 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 (60) days after the date of receipt of this Order.

3. At the discretion of U.S. Customs and Border Protection ("CBP") and pursuant to procedures it establishes, persons seeking to import biometric scanning devices, components thereof, associated software, and products containing the same 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, the products being imported are not excluded from entry under paragraph 1 of this Order. At its discretion, CBP 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 biometric scanning devices, components thereof, associated software, and products containing the same that are 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. Complainant Cross Match Technologies, Inc. ("Cross Match"), of West Palm Beach, Florida, shall file a written statement with the Commission, made under oath, on June 30 of each year until the expiration of the patent stating whether an industry in the United States relating to articles protected by the '993 patent continues to exist and, if so, briefly describing the activities constituting said industry. The report should at least include the number of ID500 devices covered by the '993 patent produced by or on behalf of Cross Match in the United States during the 12 months preceding the date of the report and any plans by Cross Match to abandon its domestic production of those devices. Cross Match shall file the original statement and two copies with the Office of the Secretary and serve a copy of the confidential version on Respondents' counsel.[1]

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).

---

[1] Respondents must file a letter with the Secretary identifying the attorney to receive the reports. The designated attorney must be on the protective order entered in the investigation.

7. The Commission 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 CBP.

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

By order of the Commission.

James R. Holbein
Secretary to the Commission

Issued: October 24, 2011

UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C.

In the Matter of

CERTAIN BIOMETRIC SCANNING DEVICES, COMPONENTS THEREOF, ASSOCIATED SOFTWARE, AND PRODUCTS CONTAINING THE SAME

Inv. No. 337-TA-720

ORDER TO CEASE AND DESIST

IT IS HEREBY ORDERED THAT Mentalix, Inc., 1255 W. 15th Street, Suite #370, Plano, Texas 75075, 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, biometric scanning devices, components thereof, associated software, and products containing the same, that infringe one or more of claims 10, 12, and 15 of U.S. Patent No. 5,900,993 ("the '993 patent") and claim 19 of U.S. Patent No. 7,203,344 ("the '344 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 Cross Match Technologies, Inc., 3950 RCA Boulevard, Suite 5001, Palm Beach Gardens, Florida 33410.

(C) "Respondent" shall mean Mentalix, Inc., 1255 W. 15th Street, Suite #370, Plano, Texas 75075.

(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.

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

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

(H) The term "covered products" shall mean biometric scanning devices, components thereof, associated software, and products containing the same that infringe one or more of claims 10, 12, and 15 of the '993 patent and claim 19 of the '344 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, licensees, 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 the Respondent in the United States is prohibited by the Order. For the remaining term of the relevant '993 or '344 patent, 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, in a written instrument, the owner of the '993 and '344 patents licenses or authorizes such specific conduct, or such specific conduct is related to the importation or sale of covered products by or for the United States.

V.

Reporting

For purposes of this reporting requirement, the reporting periods shall commence on July 1 of each year and shall end on the subsequent June 30. However, the first report required under this section shall cover the period from the date of issuance of this Order through June 30, 2012. This reporting requirement shall continue in force until such time as Respondent will have truthfully reported, in two consecutive timely filed reports, that it has 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 Respondent 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. Respondents filing

written submissions must file the original document and two copies with the Office of the Secretary. Any Respondent desiring to submit a document to the Commission in confidence must file the original and a public version of the original with the Office of the Secretary and 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.

Record-keeping and Inspection

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

[1] Complainant must file a letter with the Secretary identifying the attorney to receive the reports or bond information. The designated attorney must be on the protective order entered in the investigation.

(B) For the purposes of determining or securing compliance with this Order and for no other purpose, and subject to any privilege recognized by the federal courts of the United States, duly authorized representatives of the Commission, upon reasonable written notice by the Commission or its staff, shall be permitted access and the right to inspect and copy in Respondent's principal office 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, both in detail and in summary form as are required to be retained by subparagraph VI(A) of this Order.

VII.

Service of Cease and Desist Order

Respondent is ordered and directed to:

(A) Serve, within fifteen (15) 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 (15) 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 dates of expiration of the '993 and '344 patents.

VIII.

Confidentiality

Any request for confidential treatment of information obtained by the Commission pursuant to Sections V and VI of the Order should be in accordance with Commission Rule 210.6, 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 in accordance with section 337(f) of the Tariff Act of 1930, 19 U.S.C. § 1337(f), and any other action as the Commission may deem appropriate. In determining whether Respondent is in violation of this Order, the Commission may infer facts adverse to Respondent if Respondent fails to provide adequate or timely information.

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* 43251 (July 21, 2005), subject to Respondent posting a bond in the amount of 100 percent of 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 after the date of issuance of this order are subject to the entry bond as set forth in the limited 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 complainants in connection with the issuance of temporary exclusion orders. *See* Commission Rule 210.68, 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 which is otherwise prohibited by Section III of this Order. Upon acceptance of the bond by the Secretary, (a) the Secretary will serve an acceptance letter on all parties and (b) the Respondent must serve a copy of the bond and any accompanying documentation on Complainant's counsel.[2]

---

[2] *See* n. 1.

The bond is to be forfeited in the event that the United States Trade Representative approves, or does not disapprove within the review period, this Order, unless 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 unless Respondent exports the products subject to this bond or destroys them and provides certification to that effect 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.

James R. Holbein
Secretary to the Commission

Issued: October 24, 2011

CERTAIN BIOMETRIC SCANNING DEVICES, COMPONENTS THEREOF, ASSOCIATED SOFTWARE, AND PRODUCTS CONTAINING THE SAME **337-TA-720**

CERTIFICATE OF SERVICE

I, James R. Holbein, hereby certify that the attached **Notice** has been served by hand upon the Commission Investigative Attorney, David O. Lloyd, Esq., and the following parties as indicated, on October 24, 2011.

James R. Holbein, Secretary
U.S. International Trade Commission
500 E Street, SW
Washington, DC 20436

On Behalf of Complainant Cross Match Technologies, Inc.:

Maximilian A. Grant, Esq.
LATHAM & WATKINS LLP
555 11th Street, NW, Suite 1000
Washington, DC 20004

( ) Via Hand Delivery
(x) Via Overnight Mail
( ) Via First Class Mail
( ) Other: _____

On Behalf of Respondents Suprema, Inc. and Mentalix, Inc.:

V. James Adduci, Esq.
ADDUCI, MASTRIANI & SCHAUMBERG, LLP
1200 17th Street, NW, 5th Floor
Washington, DC 20036

( ) Via Hand Delivery
(x) Via Overnight Mail
( ) Via First Class Mail
( ) Other: _____

PUBLIC VERSION

UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C.

In the Matter of **CERTAIN BIOMETRIC SCANNING DEVICES, COMPONENTS THEREOF, ASSOCIATED SOFTWARE, AND PRODUCTS CONTAINING THE SAME**	**Investigation No. 337-TA-720**

COMMISSION OPINION

I. SUMMARY

On June 17, 2011, the presiding administrative law judge ("ALJ") issued his final initial determination ("ID") in the above-captioned investigation, finding a violation of section 337 of the Tariff Act of 1930, 19 U.S.C. § 1337, as amended ("section 337"), with respect to U.S. Patent Nos. 5,900,993 ("the '993 patent") and 7,203,344 ("the '344 patent"). The Commission determined to review the ALJ's finding of a violation of section 337 based on infringement of claim 19 of the '344 patent. On review, the Commission modifies in part the ALJ's finding on infringement of claim 19 and terminates the investigation with a finding of a violation of section 337 with respect to both patents.

II. BACKGROUND

The Commission instituted this investigation on June 17, 2010 based on a complaint filed on May 11, 2010, by Cross Match Technologies, Inc. ("Cross Match") of Palm Beach Gardens, Florida. 75 *Fed. Reg.* 34482-83. The complaint, as amended on May 26, 2010, 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 biometric scanning devices, components thereof, associated software, and products containing the same by reason of infringement of certain claims of the '993 and '344 patents, and U.S. Patent Nos. 7,277,562 ("the '562 patent") and 6,483,932 ("the '932 patent"). The complaint further alleges that an industry in the United States exists as required by subsection (a)(2) of section 337, and names two respondents, Suprema, Inc. ("Suprema") of Gyeonggi, Korea, and Mentalix, Inc. ("Mentalix") of Plano, Texas.

On June 17, 2011, the ALJ issued his final ID finding a violation of section 337 by reason of infringement of one or more of claims 10, 12, and 15 of the '993 patent by the imported devices. He also found a violation of section 337 by reason of infringement of claim 19 of the '344 patent, but found no violation with respect to the '562 patent. He also issued his recommendation on remedy and bonding during the period of Presidential review. On July 5, 2011, Cross Match, respondents, and the Commission investigative attorney ("IA") each filed a petition for review of the final ID; and on July 13, 2011, each filed a response to the opposing petitions.

On August 18, 2011, the Commission determined to review the ALJ's finding of infringement of claim 19 of the '344 patent.[1] The Commission requested briefing on certain questions concerning the issues under review and requested written submissions on the issues of remedy, the public interest, and bonding from the parties and interested non-parties. 76 *Fed. Reg.* 52970-71 (August 24, 2011). On August 30 and September 8, 2011, respectively,

[1] The determinations made in the final ID that were not reviewed became final determinations of the Commission by operation of rule. *See* 19 U.S.C. § 210.42(h).

complainant Cross Match, respondents, and the IA each filed a brief and a reply brief on the issues for which the Commission requested written submissions.[2]

After considering the written submissions, the Commission has determined to modify the ALJ's final ID by supplementing his analysis regarding infringement of claim 19 of the '344 patent. The Commission has determined that Mentalix directly infringes claim 19 of the '344 patent and that Suprema indirectly infringes claim 19, via induced infringement, but does not contributorily infringe claim 19.

Patent and Products at Issue

The asserted claims of the '344 patent pertain to a method used by a conventional optical scanning system for forming and detecting up to four simultaneous fingerprint images by comparing the scanned images with previously scanned images in accordance with an acceptable quality threshold. Suprema manufactures and imports hardware and software for scanning fingerprints. Mentalix directly imports Suprema's scanners for integration with Mentalix's software in the United States. ID at 2 (citing Order No. 11). Mentalix's accused software can be used with fingerprint scanners sold by other companies as well as Suprema. Cross Match contends that the asserted system and method claims of the '344 patent for fingerprint imaging

[2] *See* Brief and Reply Brief of the Office of Unfair Import Investigations on the Issues Under Review, and on Remedy, the Public Interest, and Bonding (August 30 and September 8, 2011) ("IA's Submission," "IA's Reply"); Complainant Cross Match Technologies, Inc.'s Response to Commission Questions and Submission Regarding Appropriate Remedies and Bond (August 30, 2011) ("Cross Match's Submission"); Complainant Cross Match Technologies, Inc.'s Reply to Respondents' and Staff's Response to the Commission's August 18, 2011 Notice (September 8, 2011) ("Cross Match's Reply"); Respondents Suprema, Inc. and Mentalix, Inc.'s Written Submission Regarding the Issues Under Review and Remedy, Bonding, and the Public Interest (August 30, 2011) ("Respondents' Submission"); Respondents Suprema, Inc. and Mentalix, Inc.'s Reply to Complainant's and Staff's Response to Commission Questions and Submission Regarding Appropriate Remedies and Bond (September 8, 2011) ("Respondents' Reply").

are infringed by Suprema's hardware when used with either respondent's software. Suprema's accused scanners use optical systems, including a light source and a sensor, to obtain images of fingerprints, and a platen for capturing fingerprints. The accused scanners use a series of optical light-focusing elements to obtain an image of the fingerprint and a camera to scan the fingerprint image. Suprema provides software development kits ("SDKs") that allow customers to create their own software to operate the scanner. The SDKs include manuals as well as dynamic link libraries ("dlls") that include functions that operate various features of the accused fingerprint scanners. Suprema is accused of infringing all the asserted patents by reason of the sale and importation of its scanners with the SDKs. Mentalix is accused of infringing the asserted '344 patent when it integrates its FedSubmit software with Suprema's scanners.

III. DISCUSSION

For the reasons set forth below, the Commission has determined to modify the final ID's infringement findings which are under review, and find a violation of section 337 by the accused Suprema scanners integrated with Mentalix's software with respect to claim 19 of the '344 patent. We find that claim 19 is directly infringed by Mentalix, and that Suprema induces infringement of, but does not contributorily infringe, claim 19. We adopt the ALJ's findings in his final ID that are not inconsistent with our determinations and opinion.

The '344 Patent - Identity of the Infringer and Theory of Infringement

We determined to review the ALJ's finding of infringement by the accused scanners in combination with the FedSubmit software. *See* ID at 97, 168. Specifically, our review concerned who infringes claim 19 of the '344 patent, under what theory of infringement, and whether there is a sufficient nexus between the infringer's unfair acts and importation to find a violation of section 337.

1. Relevant law

After properly construing the claims, a factual inquiry is conducted to compare the asserted claims with the accused device or process to determine infringement. *See MBO Labs., Inc. v. Becton Dickinson & Co.*, 474 F.3d 1323, 1329 (Fed. Cir. 2007). The patentee bears the burden of demonstrating infringement by a preponderance of the evidence. *Cross Med. Prods., Inc. v. Medtronic Sofamor Danek, Inc.*, 424 F.3d 1293, 1310 (Fed. Cir. 2005). To prove literal infringement, the patentee must show that an accused product contains every limitation in the asserted claims. *WMS Gaming Inc. v. Int'l Game Tech.*, 184 F.3d 1339, 1350 (Fed. Cir. 1999) ("To infringe a method claim, a person must have practiced all steps of the claimed method."); *Lucent Technologies, Inc. v. Gateway, Inc.*, 580 F.3d 1301, 1317 (Fed. Cir. 2009).

Infringement may be indirect as "[w]hoever actively induces infringement of a patent shall be liable as an infringer." *See* 35 U.S.C. § 271(b). Also, "[w]hoever . . . imports into the United States a component of a patented machine, manufacture, combination . . . or a material or apparatus for use in practicing a patented process, constituting a material part of the invention, knowing the same to be especially made . . . for use in [patent infringement], and not a staple article or commodity of commerce suitable for substantial noninfringing use, shall be liable as a contributory infringer." *See* 35 U.S.C. § 271(c). However, there can be no indirect infringement unless there is direct infringement. *Glenayre Elecs., Inc. v. Jackson*, 443 F.3d 851, 858 (Fed. Cir. 2006).

"To establish liability under section 271(b), a patent holder must prove that once the defendants knew of the patent, they "actively and knowingly aid[ed] and abett[ed] another's direct infringement." *DSU Med. Corp. v. JMS Co.*, 471 F.3d 1293, 1305 (Fed. Cir. 2006) (*en banc*) (citations omitted). However, "knowledge of the acts alleged to constitute infringement"

is not enough. *Id.* A high level of specific intent and action to induce infringement must be proven, as mere knowledge of possible infringement by others does not amount to inducement. *Id.*; *see also Cross Med. Prods.*, 424 F.3d at 1312 ("In order to succeed on a claim of inducement, the patentee must show, first that there has been direct infringement, and second, that the alleged infringer knowingly induced infringement and possessed specific intent to encourage another's infringement."). The intent element can be satisfied by the patentee showing that the "infringer's actions induced infringing acts and that he knew or should have known his actions would induce actual infringements." *DSU*, 471 F.3d at 1306. Induced infringement may be established by circumstantial evidence. *See Golden Blount, Inc. v. Robert M. Peterson, Inc.*, 438 F.3d 1354, 1362-63 (Fed. Cir. 2006).

A seller of a component of an infringing product can 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 noninfringing 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).

The knowledge requirement for indirect infringement may be satisfied by actual knowledge or the doctrine of "willful blindness." *See Global-Tech Appliances, Inc. v. SEB S.A.*, 131 S. Ct. 2060, 2071-72 (2011) ("a willfully blind defendant is one who takes deliberate actions to avoid confirming a high probability of wrongdoing and who can almost be said to have actually known the critical facts;" "merely a 'known risk' that the induced acts are infringing" is insufficient to establish knowledge of infringement).

The Commission's remedial authority to issue exclusion orders extends to violations of

section 337 based on indirect infringement. *See Certain Optoelectronic Devices, Components Thereof, and Products Containing the Same*, Inv. No. 337-TA-669, Comm'n Notice (July 12, 2010) (finding a violation of section 337 based on contributory and induced infringement by respondent, and issuing limited exclusion and cease and desist orders directed against the products of the indirectly infringing respondent).

2. ALJ's ID

Claim 19 (a method claim) of the '344 patent reads:

A method for capturing and processing a fingerprint image, the method comprising:

(a) scanning one or more fingers;

(b) capturing data representing a corresponding fingerprint image;

(c) filtering the fingerprint image;

(d) binarizing the filtered fingerprint image;

(e) detecting a fingerprint area based on a concentration of black pixels in the binarized fingerprint image;

(f) detecting a fingerprint shape based on an arrangement of the concentrated black pixels in an oval-like shape in the binarized fingerprint image; and

(g) determining whether the detected fingerprint area and shape are of an acceptable quality.

'344 patent (JX-2), col 19:24-37.

The ALJ found that Suprema's accused RealScan-10, RealScan-10F, RealScan-D, and RealScan-DF products infringe claim 19 when integrated with Mentalix's FedSubmit software, but did not name the infringer or state whether infringement was direct and/or indirect. *See* ID at 88-97, 100.

3. Identity of Infringer and Theory of Infringement

a. Parties' arguments

Cross Match and the IA both submit that the record evidence establishes that Mentalix directly infringes claim 19 of the '344 patent. Cross Match's Submission at 2-4; IA's Submission at 6. [[

]]. Cross Match's Submission at 2-4 (citing JX-44C (Remmers - Chief Technology Officer and Corporate Vice President (VP) of Mentalix) at 19, 40-41). Cross Match submits that Mentalix then integrated its own proprietary FedSubmit software with the Suprema scanner units and software, and repeatedly tested the integrated scanner products in the United States, thereby infringing claim 19 by practicing all steps of the claimed method during testing. *Id.* (*citing* JX-44C at 19, 48-51, 57-68, 122-23); *see Lucent Technologies*, 580 F.3d at 1317.

Regarding direct infringement, respondents do not dispute that Mentalix has used the FedSubmit software in conjunction with the imported scanners to directly infringe claim 19 of the '344 patent, but, as discussed *infra*, they contend that there is no nexus between importation of Suprema's scanners and respondents' unfair acts to support finding a violation of section 337. Respondents' Submission at 18-31.

Regarding indirect infringement, both Cross Match and the IA submit that Suprema indirectly infringes claim 19 of the '344 patent via induced infringement, where Mentalix is the direct infringer. Cross Match's Submission at 4-7; IA's Submission at 6-7; *see Glenayre*, 443 F.3d at 858. Regarding induced infringement, Cross Match contends that the record evidence establishes that Suprema "knowingly induced infringement and possessed specific intent to encourage another's infringement." *Id.* at 6 (citing *MEMC Elec. Materials, Inc. v. Mitsubishi Materials Silicon Corp.*, 420 F.3d 1369, 1378 (Fed. Cir. 2005)). Cross Match submits that [[

]]. Cross Match's Reply at 3-7 (citing JX-40C (Song Dep.) at 129-30, 182-87, 1360; CX-395C at SPA0235176 at CMT-T-000582; JX-42C (Moon Dep. (Suprema's Vice-President)) at 148, 154, 361; CX-393C at SPA0089763 at 5, 45; CX-158C at SPA0061499 at 2; Song, Tr. at 1143-46; CX-387C at SPA0242635 at 2, 8; CX-544C (Lee Dep.) (Suprema's Chief Research Engineer) at 9-13, 42-43; CX-152C at SPA0168465 at 2, 5). Cross Match further argues that Suprema intended its scanners to be used for the autocapture, image

quality checking, and automatic segmentation processes that are covered by the '344 patent. Cross Match's Submission at 5 (citing JX-29C at 120544-45; CX-383).

The IA asserts that [[

]]. IA's Submission at 6-7 (citing Song (Suprema's Executive Vice-President (VP) of Research and Development), Tr. at 1138-39). The IA argues that Suprema's failure to obtain an opinion of counsel, or otherwise try to avoid infringement, is further evidence of intent to induce. IA's Reply at 6 (citing *Broadcom Corp. v. Qualcomm Inc.*, 543 F.3d 683, 698-701 (Fed. Cir. 2008)).

Cross Match also asserts that Suprema indirectly infringes via contributory infringement. Cross Match's Submission at 4-7. Cross Match contends that the infringing functionalities of Mentalix's FedSubmit software originate in functions from the Suprema SDKs provided to Mentalix by Suprema and created specifically to be used with Suprema RealScan fingerprint scanners. *Id.* at 6-7 (citing JX-29 at § 1.3); Cross Match's Reply at 9-13. Cross Match submits that the functions in the Suprema SDKs are designed to permit use of the capabilities of the Suprema biometric scanners and serve no other purpose. Cross Match's Submission at 6 (citing *Ricoh Co., Ltd. v. Quanta Computer Inc.*, 550 F.3d 1325, 1337 (Fed. Cir. 2008) ("A component, specially adapted for use in the patented process and with no substantial non-infringing use, would plainly be good for nothing else but infringement of the patented process.")). Cross Match cites [[

]], and submits that Suprema's scanner is especially adapted to work only with the FedSubmit software and lacks any substantial noninfringing uses. Cross Match's Reply at 9-13 (citing Remmers, Tr. at 1070-74; CX-502C; JX-44C at 2, 17-19, 30, 124).

Regarding indirect infringement, respondents argue that there is no record evidence showing that Suprema indirectly infringed claim 19, either via contributory or induced infringement. *Id.* at 6-18. Regarding induced infringement, respondents contend that Suprema lacks both: (1) knowledge that its products could be used to infringe, and (2) intent to cause infringement, showings which are necessary to support a finding of induced infringement. *Id.* [[

]]. *Id.* at 6-18. Respondents also submit that these circumstances do not constitute "willful blindness" of the '344 patent, which is an exception to the knowledge requirement for inducement. *Id.* (citing *Global-Tech Appliances,* 131 S. Ct. at 2071-72). Respondents also submit that there is nothing in the record to show Suprema's intent to induce infringement, but only its intent to cause the *acts* which are alleged to constitute infringement. *Id.* (citing *DSU*, 471 F.3d at 1305) (emphasis added).

Regarding contributory infringement, respondents contend that Suprema does not satisfy the statutory requirements of 35 U.S.C. § 271(c), *i.e.*, that Suprema does not provide a "material or apparatus for use in practicing a patented process," with knowledge that it is "especially adapted for use in an infringement of such patent, and not a staple article or commodity of commerce suitable for substantial infringing use." *Id.* at 7-14; Respondents' Reply at 15-25. Respondents argue that Suprema's RealScan scanners are capable of substantial non-infringing uses. Respondents' Submission at 7-14. They submit that Suprema's scanners can be used with Suprema's own software and with a wide array of third-party software, including software developed by its customers DNA Lifeprint, M2Sys, Fingerprint Solutions, and others. *Id.* (citing

JX-51C at 51, 104-05, 110-12; JX-56C at 62, 66, 72-74; JX-55C at 21-23; JX-54C at 46-48, 54). They also note that the ALJ found that none of these third party customers infringed any claim of the asserted patents (and the Commission did not review his findings). *Id.* (citing ID at 98).

b. Analysis

The Commission finds that the record evidence is sufficient to support a finding of direct infringement of claim 19 of the '344 patent by Mentalix, and a finding of induced infringement by Suprema. However, we do not find that the record evidence supports a finding of contributory infringement by Suprema.

Direct/Induced infringement

The record evidence shows, and Mentalix itself does not dispute, that it integrates its FedSubmit software with the imported Suprema scanners and SDK software to produce a resulting scanner system that practices claim 19, and that Mentalix directly infringed claim 19 by [[

]]. *See* JX-44C at 19, 48-51, 57-68, 122-23; Mentalix's Submission at 18. Accordingly, Mentalix is a direct infringer and has violated section 337 if a nexus is found between the importation of the Suprema scanners and SDK and the unfair act of infringement. 19 U.S.C. § 1337(a)(1)(B). As described *infra*, we find that the same record evidence that shows induced infringement by Suprema also shows the requisite nexus between importation and the unfair acts to find a violation of section 337 by both respondents.

The record evidence shows that Suprema is liable for induced infringement under section 271(b). [[ ]], then "willfully blinded" itself to the infringing nature of Mentalix's activities which it had actively encouraged. *See DSU*, 471 F.3d at 1305; *Global-Tech Appliances*, 131 S. Ct. at 2070-71 (the knowledge

requirement for inducement may be satisfied by the doctrine of "willful blindness" where the inducer "takes deliberate actions to avoid confirming a high probability of wrongdoing" and therefore "can almost be said to have actually known the critical facts."). The doctrine of "willful blindness" requires that: (1) the alleged infringer must subjectively believe that there is a high probability that a fact exists; and (2) the defendant must take deliberate actions to avoid learning that fact. *Global-Tech,* 131 S.Ct. at 2070.

[[[3]

]]. Ultimately, Suprema succeeded in developing into its scanners the autocapture, image quality checking, and automatic segmentation processes that are covered by the '344 patent. *See* JX-29 (RealScan Basic SDK Reference Manual) at 120544-45; CX 383 (RealScan-10 product brochure); CX-544C at 9-13, 42-43 [[

]]. In the "Cross-Reference to Related Applications" section at the beginning of the written disclosure, the '562 patent states that "[t]he present application is related to U.S. patent application Ser. No. 10/345,420 and U.S. patent application Ser. No. 10/345,366, both filed on

[3][[ ]]. *See* Song, Tr. at 1138 (emphasis added).

Jan. 16, 2003, which are incorporated by reference in their entireties."[4] *See* '562 patent (JX-3), col. 1:11-14. This incorporation-by-reference language is similarly repeated three separate times in column 5 of the written description. *See* '562 patent (JX-3), col. 5:30-34, 39-42, 64-67 ("U.S. patent application Ser. No. 10/345,420 and U.S. patent application Ser. No. 10/345,366, which are incorporated by reference in their entireties."). The '562 and '344 patents also have overlapping inventors and share the same assignee, Cross Match, so a word search likely would have identified both patents.

[4]The '344 patent issued in April 2007, six months prior to the October 2007 issue date of the '562 patent. *See* '344 patent (JX-2), '562 patent (JX-3).

[[

]]. Suprema's deliberate avoidance of acquiring knowledge of the '344 patent is further shown by its failure to obtain the opinion of counsel. Such an opinion undoubtedly would have uncovered the '344 patent, the fact that both the '344 and '562 patents are assigned to Cross Match, and would have analyzed whether Suprema infringed any of the Cross Match patents. *See* Tr. at 1138-39, 1143-46; JX-40C at 129-30, 182-87; CX-395C at SPA0235176 at CMT-T-000582; JX-42C at 148, 154, 361; *see, e.g., Broadcom Corp. v. Qualcomm Inc.,* 543 F.3d 683, 698-701 (Fed. Cir. 2008).

Based on the foregoing, the Commission finds that the record evidences Suprema's subjective belief of the high probability that Cross Match's scanner technology was patented, and therefore Suprema was aware of the likelihood that the scanner products it was developing would be covered by Cross Match's patents, but took steps to avoid learning for certain that they were. *See Global-Tech Appliances*, 131 S. Ct. at 2071-72. Accordingly, even if Suprema did somehow fail to learn of the '344 patent at issue here [[

]], Suprema willfully blinded itself to the evidence of the existence of '344 patent and therefore deliberately shielded itself from the nature of the infringing activities it actively encouraged and facilitated Mentalix to make. *Id.*

Because we find that the doctrine of "willful blindness" has been satisfied here, it is not necessary for the Commission to reach the issue of whether actual knowledge of the '344 patent has been shown by the record evidence.

Regarding aiding and abetting direct infringement, we find that the record is replete with evidence of Suprema's efforts to collaborate with Mentalix to import the scanners and to help adapt Mentalix's FedSubmit software to work with Suprema's imported scanners and SDK to practice claim 19 of the '344 patent. These collaborative efforts between Suprema and Mentalix included, but are not limited to, [[

]].

The record evidence of these collaborative efforts is sufficient to show Suprema's aiding and abetting of Mentalix to adapt and integrate its FedSubmit software with Suprema's scanners and SDK to infringe claim 19 of the '344 patent. Accordingly, the Commission finds that Suprema satisfies the requisite elements for inducing infringement of claim 19 by Mentalix.

Contributory infringement

The Commission finds that the record evidence is insufficient to prove that Suprema is a contributory infringer because complainant has failed to satisfy its burden to prove that the accused products have no substantial non-infringing uses. To the contrary, the evidence shows that Suprema provides the same scanners and SDK to all customers. The scanners and SDK may be modified by customers to suit their individual applications. [[

]]. However, Cross-Match has not provided evidence to show that the Suprema scanners and SDK sold to third parties have no non-infringing uses. *See Ricoh Co., Ltd. v. Quanta Computer Inc.*, 550 F.3d 1325, 1337 (Fed. Cir. 2008). Nor has Cross-Match shown that the Suprema scanners and SDK are incapable of being used in any way other than by infringing claim 19 of the '344 patent. In the instant investigation, Cross Match alleged that several third parties directly infringed certain claims of the '562 and/or the '344 patent based on software written by third parties that use the Suprema SDK but chose not to allege direct infringement of claim 19 by any of these third-party customers, and therefore there is no finding that this claim is directly infringed by any entity other than Mentalix. *See* ID at 98. Cross-Match's third party infringement allegations in this investigation are inconsistent with its argument that Suprema scanners and SDK have no non-infringing uses. Accordingly, we find

that Cross Match has not met its burden to demonstrate that there are no substantial non-infringing uses for Suprema's imported scanners and SDK.

Contrary to Cross Match's contentions, there is no record evidence that Suprema is selling a unique RealScan scanner and SDK to Mentalix that is specially adapted to infringe claim 19 in combination with the FedSubmit software. We find that the evidence Cross Match presents regarding Mentalix's efforts to customize its FedSubmit software is irrelevant since the focus of a contributory infringement analysis is on the contributory component and whether that component has substantial non-infringing uses or is specially adapted to combine only with the components of an end-product that infringes. *See CR Bard, Inc. v. Advanced Cardiovascular Sys., Inc.*, 911 F.2d 670, 674-75 (Fed. Cir. 1990) (the Court finding that the "critical issue" was "[w]hether the ACS catheter has no use except through practice of the patented method[.]"). The focus is not on whether the end-product components it combines with are specially adapted to infringe. Also, it is undisputed that Suprema is not a system integrator (*i.e.*, it does not provide an integrated fingerprint system with a complete software application), so therefore end-users of Suprema's software have to develop and use their own software to operate the RealScan scanners for actual scanning applications. *See* Jones (respondents' expert), Tr. at 1411-16. It is further undisputed that [[

]]. *See* Jones, Tr. at 1417-18; RDX-6C-06. Thus, we find that the evidence shows that all of Suprema's sales are of RealScan scanners and SDK that require development of unique end-user software to operate. Therefore in the hands of third-party customers other than Mentalix, these same scanners and SDK are capable of substantial non-infringing use. *See* JX-51C at 51, 104-05, 110-12; JX-56C at 62, 66, 72-74; JX-55C at 21-23; JX-54C at 46-48, 54, 74-75; McWilliams, Tr. at 671-73.

Based on this evidence, the Commission finds that Cross-Match has failed to satisfy its burden to demonstrate contributory infringement with respect to the imported Suprema scanners and SDK. *See CR Bard*, 911 F.2d at 674-75.

4. Nexus Between Unfair Acts And Importation

a. Parties' arguments

Cross Match and the IA submit that the requisite nexus between the unfair acts and importation is established by the record evidence here. Cross Match's Submission at 7-14; Cross Match's Reply at 13-16; IA's Submission at 7-11; IA's Reply at 6-9. Cross Match contends that nexus is established here by either: (1) respondents' knowledge that the imported RealScan scanners would be incorporated into an infringing device; or (2) Suprema's contributory infringement of claim 19. Cross Match's Submission at 7-14 (citing *Certain Inkjet Ink Cartridges with Printheads and Components Thereof*, Inv. No. 337-TA-723, 2011 ITC LEXIS 394, Order No. 37, at *6-7 (January 28, 2011); *Certain Hardware Logic Emulation Systems and Components Thereof*, Inv. No. 337-TA-383, 1998 ITC LEXIS 64, Comm'n Op. (April 1, 1998) ("*Hardware Logic*"). Specifically, Cross Match submits that the record here provides substantial evidence that respondents undertook significant software programming efforts to facilitate the combination of imported Suprema RealScan scanners and software with Mentalix's FedSubmit biometric identification software. Cross Match's Submission at 8-9 (citing CX-366C at 1-3; CX-534C at MTX0006136; CX-382C at 1-4). Cross Match argues that respondents' knowledge that the RealScan scanners would be combined with the FedSubmit software to produce an infringing device establishes the requisite nexus between the unfair act and the importation. *Id.*

Cross Match contends that *Cardiac Pacemakers*, where the Commission found no nexus due to lack of indirect infringement, is distinguishable from this investigation. *Certain Cardiac Pacemakers and Components Thereof*, Inv. No. 337-TA-162, 1984 WL 273827, Order No. 37, at *2 (March 21, 1984). Cross Match explains that the "two minor components" at issue in *Cardiac Pacemakers* were general, off-the-shelf ruby tubes and quartz crystals that did not infringe, and that the Commission found that these components were "minor" and "staple articles used in several non-infringing applications." Cross Match's Submission at 12-14 (citing *Cardiac Pacemakers*, Order No. 37). On the other hand, Cross Match argues, the record here establishes that the imported RealScan scanners are not mere "minor components," but rather are sophisticated biometric devices with advanced optics that have also been separately adjudicated to infringe the '993 patent. *Id.*; *see* ID at 77.

The IA agrees that a nexus exists based on induced infringement, and therefore contends that there is no need to reach the issue of contributory infringement. IA's Submission at 7-11. The IA asserts that *DRAMs* is similarly distinguishable from this case because the Commission did not find induced or contributory infringement in that investigation. *Id.* at 8-10 (citing *Certain Dynamic Random Access Memories, Components Thereof and Products Containing Same*, Inv. No. 337-TA-242, Comm'n Op. at 90-92 (Sept. 21, 1987). The IA further submits that other Commission precedent found a nexus based on similar facts, *i.e.*, integration of U.S. components with the imported article to assemble the infringing system, and provides authority to also find a nexus here based on Suprema's inducement of Mentalix's direct infringement. *Id.* (citing *Certain Fluidized Supporting Apparatus and Components Thereof*, Inv. No. 337-TA-182/188, Initial Determination at *143-44, 1984 ITC LEXIS 70 (June 16, 1984) ("there is a sufficient link between the alleged unfair acts and the assembled article if the importation of

components of the article is an important step in the production and sale of the article."); *Certain Personal Computers and Components Thereof*, Inv. No. 337-TA-140, Comm'n Op. at 36 (March 9, 1984) (the Commission found a nexus existed when a computer chip containing infringing software was added to an imported computer after importation because the computer chip was an "integral part" of the infringing computer system when it was sold)).

Respondents argue that there is no nexus between importation and respondents' unfair acts. Respondents' Submission at 18-29; Respondents' Reply at 25-38. They contend that under these circumstances, where the complete infringing article is not imported, but rather assembled in the United States, the Commission's authority to find a section 337 violation (and issue a remedy) is limited to articles that indirectly infringe, either contributorily or by inducement. *Id.* (citing *Cardiac Pacemakers*, Order No. 37; DRAMs, Comm'n Op. at 90-92). They submit that the facts of this investigation are precisely like those in *Cardiac Pacemakers* and *DRAMs* where a lack of indirect infringement prohibits a finding of a violation of section 337. *Id.*

b. Analysis

The Commission finds respondents' nexus argument moot in view of our modification to the final ID, as discussed *supra*, that there has been direct infringement of claim 19 of the '344 patent by Mentalix and indirect infringement of claim 19, via inducement, by Suprema. *See DRAMs*, Comm'n Op. at 90-92; *Cardiac Pacemakers*, Order No. 37, at *2.

IV. CONCLUSION ON VIOLATION WITH RESPECT TO THE '344 PATENT

For the reasons discussed herein, the Commission has determined to modify-in-part the subject ID such that: (1) Mentalix is found to directly infringe claim 19 of the '344 patent; (2) Suprema is found to indirectly infringe claim 19 via induced infringement; and (3) Suprema is not

found to indirectly infringe claim 19 via contributory infringement. These actions result in a finding of a violation of section 337 by both respondents. Also, the Commission affirms all the ALJ's factual findings underlying the issues that are on review.

V. REMEDY, PUBLIC INTEREST, AND BONDING

For the reasons set forth below, the Commission has determined to adopt the ALJ's recommended determination ("RD") on remedy and bonding. *See* ID at 158-66. We have also determined that the public interest does not preclude the ALJ's recommended remedy.

The Commission is authorized to issue a limited exclusion order when the Commission determines that there is a violation of section 337 of the Tariff Act of 1930, as amended (19 U.S.C. § 1337). The ALJ recommended that if the Commission were to determine that there has been a violation of section 337, a limited exclusion order should issue that prohibits the importation into the United States of infringing articles, regardless of brand name, "that are manufactured abroad or imported by or on behalf of either respondent, or any of its affiliated companies, parents, subsidiaries, or other related business entities, or their successors or assigns." *Id.* Also, the ALJ recommended that the order should not be limited to specifically-identified products, but rather should extend to all infringing products. *Id.* The ALJ further recommended, as to software associated with any infringing article, that any exclusion order extend only to the importation of software on fixed media. *Id.* He rejected Cross Match's argument that any exclusion order should block the electronic transmission of such software into the United States because previous investigations have found that this proposed remedy is impractical. *Id.* (citing *Hardware Logic*, Comm'n Op. at 19-20 (refusing to bar electronic transmissions out of deference to Customs' limitations in its ability to enforce the order); *Certain Systems for Detecting and*

Removing Viruses or Worms, Components Thereof, and Products Containing the Same, Inv. No. 337-TA-510, Comm'n Op. at 4-5 (August 8, 2005)).

Further, with respect to the '993 patent, the ALJ recommended that any exclusion order contain a reporting requirement for Cross Match. [[

]]. Accordingly, the ALJ found that Cross Match should be required to periodically certify that it is continuing to exploit the '993 patent. *Id.* (citing *Certain Variable Speed Wind Turbines and Components Thereof*, Inv. No. 337-TA-376, Comm'n Op. at 18, USITC Pub. 303 (Nov. 1996); *Certain Wire Electrical Discharge Machining Apparatus and Components Thereof,* Inv. No, 337-TA-290, Comm'n Op. at 20 (March 16, 1990); *Certain Caulking Guns,* Inv. No. 337-TA-139, USITC Pub. 1507, Comm'n Op. at 3 (March 1984)).

The ALJ also found that a cease and desist order directed to Mentalix is warranted because respondents admitted that [[

]]. *Id.* (citing JX-44C at 124-25); *see Certain Crystalline Cefadroxil Monohydrate*, Inv. No. 337-TA-293, USITC Pub. 2391, Comm'n Op. at 37-42 (June 1991).

Regarding bonding, the ALJ found that, [[

]]. Therefore, the ALJ recommended a bond of 100 percent of the entered value of the covered products during the period of Presidential review. *Id.*

A. Remedy

The Commission agrees with the ALJ that the appropriate relief includes a limited exclusion order covering infringing biometric scanning devices, components thereof, associated software, and products containing the same that are manufactured abroad or imported by or on behalf of Suprema or Mentalix, or any of its affiliated companies, parents, subsidiaries, or other related business entities, or their successors or assigns. We also agree with the ALJ that Cross Match has provided specific evidence that Mentalix maintains a "commercially significant" inventory of accused, infringing scanner systems using the FedSubmit software products such that issuance of a cease and desist order directed against Mentalix is warranted. *See* JX-44C at 124-25.

The Commission also agrees with the ALJ that any exclusion order should include a reporting requirement with respect to the '993 patent. The record evidence establishes that [[

]], we view a reporting requirement as warranted in this case to ensure that Cross Match continues to exploit the '993 patent while the remedy is in place.

We further find that a cease and desist order directed to Suprema, a foreign entity, is *not* warranted. Under long-standing precedent, the Commission does not issue cease and desist orders directed to foreign respondents who do not have inventories in the United States because of

the difficulty in enforcing such an order. *See, e.g., Certain Flash Memory Circuits and Products Containing Same,* Inv. No. 337-TA-382, USITC Pub. 3046, Comm'n Op. at 25, (July 1997) ("It is our practice to issue cease and desist orders only to domestic respondents, particularly in *light* of the difficulty of enforcing such orders against foreign entities."). Cross Match has not established that Suprema itself, or through an agent, maintains inventories in the United States. *See, e.g., Certain Cast Steel Railway Wheels, Processes for Manufacturing or Relating to Same and Certain Products Containing Same,* Inv. No. 337-TA-655, Comm'n Op. at 9 (March 19, 2010) ("the record evidence shows that respondents [including foreign respondents] maintain commercially significant inventories of wheels in the United States"); *Certain Abrasive Products Made Using a Process for Powder Preforms, and Products Containing Same,* Inv. No. 337-TA-449, USITC Pub. 3530, Comm'n Op. at 7-8 & n.16, (Aug. 2002) (foreign respondent's agent maintained a domestic inventory on respondent's behalf).

In addition, the Commission finds that complainant has not established evidence demonstrating the need for a provision in any remedial order excluding electronic importation. Unlike the facts of *Hardware Logic* where electronic importation was barred by the cease and desist order, Suprema's SDK software, by itself, was not found to directly or contributorily infringe here. *See Hardware Logic*, Comm'n Op. at 39-42. Moreover, we agree with the ALJ that enforcement of such a provision would be impractical. *Id.* at 19-20. Accordingly, the Commission has determined not to issue a cease and desist order directed to Suprema or include a provision in any remedial order excluding electronic importation.

B. Public interest

When issuing an exclusion order under section 337(d) or a cease and desist order under section 337(f), the Commission must weigh the remedy sought against the effect such a remedy

would have on the following public interest factors: (1) the public health and welfare; (2) the competitive conditions in the United States economy; (3) the production of articles in the United States that are like or directly competitive with those subject to the investigation; and (4) United States consumers. *See* 19 U.S.C. §§ 1337(d)(1), (f)(1).

The Commission finds that its remedial orders are not contrary to the public interest since U.S. demand for biometric scanning devices, components thereof, associated software, and products containing the same can be met by other entities, including Cross Match. We also find that respondent has not presented evidence that an exemption for repair parts is necessary in this case for any remedial order. *See Certain Liquid Crystals Display Modules, Products Containing Same, and Methods Using the Same*, Inv. No. 337-TA-634, Comm'n Op. at 8 (Nov. 24, 2009) ("*LCD Devices*"). Tellingly, unlike *LCD Devices*, there have been no third-party submissions regarding remedy, the public interest, and bonding. Also, respondents have not made clear exactly what "replacement parts" are necessary to import here, what burdens and expenses would be imposed on third parties in the absence of such a "repair parts" exemption, and how long such an exemption is necessary to be in effect.

Also, we specifically find that our remedial orders with respect to claim 19 of the '344 patent are not contrary to the public interest because the record evidence firmly establishes that [[

]].

C. Bonding

Section 337(j) provides for entry of infringing articles during the sixty (60) day period of Presidential review upon posting of a bond and states that the bond is to be set at a level "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).

The Commission has determined that the posting of a bond is warranted in this case because Cross Match has proven that it exploits all of the patents at issue in the United States, and therefore any infringing importation undercuts the domestic industry and results in injury to Cross Match. *See* 19 U.S.C. § 1337(j)(3); ID at 142-44 (finding that Complainant satisfies technical prong) (unreviewed by Commission). The Commission also agrees with the ALJ that [[

]]. Accordingly, the Commission has determined that a bond of 100 percent of the entered value for the covered products is appropriate during the period of Presidential review. *See Digital Multimeters*, Comm'n Op. at 12-13.

D. Request for a Hearing

The Commission has determined that no hearing pursuant to Commission Rule 210.45(a) is warranted here because this case does not present any special circumstances that can be resolved only by holding a hearing on the issues of remedy, the public interest, and bonding. Again, tellingly, no third-parties filed submissions in this investigation.

VI. CONCLUSION

The Commission has determined that there has been a violation of section 337, and has further determined that the appropriate form of relief is a limited exclusion order prohibiting the unlicensed entry of biometric scanning devices, components thereof, associated software, and products containing the same that infringe one or more of claims 10, 12, and 15 of the '993 patent or claim 19 of the '344 patent, and that are manufactured abroad or imported by or on behalf of Suprema or Mentalix, or any of its affiliated companies, parents, subsidiaries, or other related business entities, or their successors or assigns. The Commission has also determined to issue a cease and desist order directed to Mentalix prohibiting it from importing, selling, advertising, distributing, marketing, consigning, transferring (except for exportation), offering for sale in the United States and soliciting U.S. agents or distributors for the subject products.

The Commission further has determined that the public interest factors enumerated in section 337(d)(1) (19 U.S.C. § 1337(d)(1)) and (f)(1) (19 U.S.C. § 1337(f)(1) do not preclude issuance of the limited exclusion order and cease and desist order. Finally, the Commission

determined that there should be a 100 percent bond of the entered value of the covered products during the period of Presidential review.

By order of the Commission.

James R. Holbein
Secretary to the Commission

Issued: November 10, 2011

CERTAIN BIOMETRIC SCANNING DEVICES, COMPONENTS THEREOF, ASSOCIATED SOFTWARE, AND PRODUCTS CONTAINING THE SAME **337-TA-720**

CERTIFICATE OF SERVICE

I, James R. Holbein, hereby certify that the attached **Notice** has been served by hand upon the Commission Investigative Attorney, David O. Lloyd, Esq., and the following parties as indicated, on **November 10, 2011**.

James R. Holbein, Secretary
U.S. International Trade Commission
500 E Street, SW
Washington, DC 20436

On Behalf of Complainant Cross Match Technologies, Inc.:

Maximilian A. Grant, Esq.
LATHAM & WATKINS LLP
555 11th Street, NW, Suite 1000
Washington, DC 20004

( ) Via Hand Delivery
(x) Via Overnight Mail
( ) Via First Class Mail
( ) Other: _____

On Behalf of Respondents Suprema, Inc. and Mentalix, Inc.:

V. James Adduci, Esq.
ADDUCI, MASTRIANI & SCHAUMBERG, LLP
1200 17th Street, NW, 5th Floor
Washington, DC 20036

( ) Via Hand Delivery
(x) Via Overnight Mail
( ) Via First Class Mail
( ) Other: _____

UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C.

In the Matter of

CERTAIN BIOMETRIC SCANNING DEVICES, COMPONENTS THEREOF, ASSOCIATED SOFTWARE, AND PRODUCTS CONTAINING THE SAME

Investigation No. 337-TA-720

NOTICE OF COMMISSION DECISION TO REVIEW-IN-PART A FINAL INITIAL DETERMINATION FINDING A VIOLATION OF SECTION 337; REQUEST FOR WRITTEN SUBMISSIONS REGARDING THE ISSUES UNDER REVIEW AND REMEDY, BONDING, AND THE PUBLIC INTEREST

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 a final initial determination ("ID") of the presiding administrative law judge ("ALJ") finding a violation of section 337 in the above-captioned investigation, and is requesting written submissions regarding the issues under review and remedy, bonding, and the public interest.

FOR FURTHER INFORMATION CONTACT: Clint Gerdine, Esq., Office of the General Counsel, U.S. International Trade Commission, 500 E Street, S.W., Washington, D.C. 20436, telephone (202) 708-2310. 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 at *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 June 17, 2010 based on a complaint filed on May 11, 2010, by Cross Match Technologies, Inc. ("Cross Match") of Palm Beach Gardens, Florida. 75 *Fed. Reg.* 34482-83. The complaint, as amended on May 26, 2010, 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 biometric scanning devices, components

thereof, associated software, and products containing the same by reason of infringement of certain claims of U.S. Patent Nos. 5,900,993 ("the '993 patent"); 7,203,344 ("the '344 patent"); 7,277,562 ("the '562 patent"); and 6,483,932 ("the '932 patent"). The complaint further alleges that an industry in the United States exists as required by subsection (a)(2) of section 337, and names two respondents, Suprema, Inc. ("Suprema") of Korea and Mentalix, Inc. of Plano, Texas.

On November 10, 2010, the Commission issued notice of its determination not to review the ALJ's ID granting Cross Match's motion to amend the complaint by adding allegations of infringement as to claims 5-6, 12, and 30 of the '562 patent, and claims 7, 15, 19, and 45 of the '344 patent. On December 27, 2010, the Commission issued notice of its determination not to review the ALJ's ID granting Cross Match's motion to terminate the investigation as to claims 6-8, 13-15, and 19-21 of the `932 patent (eliminating this patent from the investigation); claims 13 and 16 of the `993 patent; claims 4, 15, 30, 32, and 44 of the `344 patent; and claim 2 of the `562 patent based on withdrawal of these claims from the complaint. On March 18, 2011, the Commission issued notice of its determination not to review the ALJ's ID granting Cross Match's motion for summary determination that it satisfies the economic prong of the domestic industry requirement.

On June 17, 2011, the ALJ issued his final ID finding a violation of section 337 by Suprema by reason of infringement of one or more of claims 10, 12, and 15 of the '993 patent. The ALJ also found a violation of section 337 by reason of infringement of claim 19 of the '344 patent. The ALJ found no violation of section 337 with respect to the '932 patent. He also issued his recommendation on remedy and bonding during the period of Presidential review. On July 5, 2011, Cross Match, respondents, and the Commission investigative attorney ("IA") each filed a petition for review of the final ID; and on July 13, 2011, each filed a response to the other party's opposing petition.

Upon considering the parties' filings, the Commission has determined to review-in-part the ID. Specifically, the Commission has determined to review the ALJ's finding of a violation of section 337 based on infringement of claim 19 of the '344 patent. The Commission has determined not to review the remainder of the ID.

On review, with respect to violation, the parties are requested to submit briefing limited to the following issues:

(1) Who infringes claim 19 of the '344 patent and what type of infringement has occurred? Please consider direct, contributory, and induced infringement.

(2) Is there is a sufficient nexus between the infringer's unfair acts and importation to find a violation of section 337? *See, e.g.*, *Dynamic Random Access Memories, Components Thereof and Products Containing Same*, Inv. No. 337-TA-242, Comm'n Op. (Sept. 21, 1987); *Certain Cardiac Pacemakers and Components Thereof*, Inv. No. 337-TA-162, 1984 WL 273827, Order No. 37 (March 21, 1984).

In addressing these issues, the parties are requested to make specific reference to the evidentiary record and to cite relevant authority.

In connection with the final disposition of this investigation, the Commission may issue an order that results in the exclusion of the subject articles from entry into the United States. 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 In the Matter of Certain Devices for Connecting Computers via Telephone Lines*, Inv. No. 337-TA-360, USITC Pub. No. 2843 (December 1994) (Commission Opinion).

When 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 orders 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.

When 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* section 337(j), 19 U.S.C. § 1337(j) and the 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. 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 the issues under review that specifically address the Commission's questions set forth in this notice. The submissions should be concise and thoroughly referenced to the record in this investigation. 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, and such submissions should address the recommended determination by the ALJ on remedy and bonding. The complainant and the IA are also requested to submit proposed remedial orders for the Commission's consideration. Complainant is also requested to state the dates that the patents at issue expire and the HTSUS numbers under which the accused articles are imported. The written submissions and proposed remedial orders must be filed no later than close of business on August 30, 2011. Reply submissions must be filed no later than the close of business on September 8. No further submissions on these issues will be permitted unless otherwise ordered by the Commission.

Persons filing written submissions must file the original document and 12 true copies thereof on or before the deadlines stated above with the Office of the Secretary. Any person

desiring to submit a document to the Commission in confidence must request confidential treatment unless the information has already been granted such treatment during the proceedings. All such requests should be directed to the Secretary of the Commission and must include a full statement of the reasons why the Commission should grant such treatment. *See* 19 C.F.R. §C210.6. Documents for which confidential treatment by the Commission is sought will be treated accordingly. All nonconfidential written submissions will be available for public inspection at the Office of the Secretary.

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 sections 210.42-46 of the Commission's Rules of Practice and Procedure, 19 C.F.R. §§ 210.42-46.

By order of the Commission.

James R. Holbein
Secretary to the Commission

Issued: August 18, 2011

CERTAIN BIOMETRIC SCANNING DEVICES, COMPONENTS THEREOF, ASSOCIATED SOFTWARE, AND PRODUCTS CONTAINING THE SAME **337-TA-720**

CERTIFICATE OF SERVICE

I, James R. Holbein, hereby certify that the attached has been served by hand upon the Commission Investigative Attorney, David O. Lloyd, Esq., and the following parties as indicated, on August 18, 2011.

James R. Holbein, Secretary
U.S. International Trade Commission
500 E Street, SW
Washington, DC 20436

On Behalf of Complainant Cross Match Technologies, Inc.:

Maximilian A. Grant, Esq.
LATHAM & WATKINS LLP
555 11th Street, NW, Suite 1000
Washington, DC 20004

( ) Via Hand Delivery
( ) Via Overnight Mail
(x) Via First Class Mail
( ) Other: _____

On Behalf of Respondents Suprema, Inc. and Mentalix, Inc.:

V. James Adduci, Esq.
ADDUCI, MASTRIANI & SCHAUMBERG, LLP
1200 17th Street, NW, 5th Floor
Washington, DC 20036

( ) Via Hand Delivery
( ) Via Overnight Mail
(x) Via First Class Mail
( ) Other: _____

PUBLIC VERSION

UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C.

In the Matter of	
CERTAIN BIOMETRIC SCANNING DEVICES, COMPONENTS THEREOF, ASSOCIATED SOFTWARE, AND PRODUCTS CONTAINING THE SAME	Inv. No. 337-TA-720

Final Initial and Recommended Determinations

This is the administrative law judge's Final Initial Determination under Commission rule 210.42. The administrative law judge, after a review of the record developed, finds inter alia that there is jurisdiction and that there is a violation of section 337 of the Tariff Act of 1930, as amended.

This is also the administrative law judge's Recommended Determination on remedy and bonding, pursuant to Commission rules 210.36(a) and 210.42(a)(1)(ii). Should the Commission find a violation, the administrative law judge recommends the issuance of limited exclusion orders barring entry into the United States of infringing biometric scanning devices, components thereof, associated software, and products containing the same as well as the issuance of an appropriate cease and desist order. Also should a violation be found, the administrative law judge recommends a bond of 100% of entered value during the Presidential Review period.

TABLE OF CONTENTS

ABBREVIATIONS

CBr	Complainant's Post Hearing Brief
CRBr	Complainant's Post Hearing Reply Brief
CFF	Complainant's Proposed Findings of Fact
CRFF	Complainant's Rebuttal to Respondents' Proposed Findings of Fact
CRSFF	Complainant's Rebuttal to Staff's Proposed Finding Of Fact
RBr	Respondents' Post Hearing Brief
RDX	Respondents' Demonstrative Exhibit
RRBr	Respondents' Post Hearing Reply Brief
RFF	Respondents' Proposed Findings of Fact
RPX	Respondents' Physical Exhibit
RRFF	Respondents' Rebuttal Findings of Fact
RRCFF	Respondents' Rebuttal to Complainant's Proposed Findings Of Fact
RRSFF	Respondents' Rebuttal to Staff's Proposed Findings Of Fact
SBr	Staff's Post Hearing Brief
SFF	Staff's Proposed Finding Of Fact
SRBr	Staff's Post Hearing Reply Brief
Tr.	Transcript Of Hearing

OPINION

I. Procedural History

By notice, dated June 11, 2010, the Commission instituted an investigation, pursuant to subsection (b) of section 337 of the Tariff Act of 1930, as amended, to determine (a) 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 biometric scanning devices, components thereof, associated software, or products containing the same that infringe one or more of claims 10-13 and 15-18 of U.S. Patent No. 5,900,993 ('993 patent), claims 6, 7, 8, 13, 14, 15, and 19, 20 and 21 of U.S. Patent No. 6,483,932 ('932 patent), claims 1, 4, 30, 32, and 41-44 of U.S. Patent No. 7,203,344 ('344 patent) and claims 1, 2, and 7 of U.S. Patent No.7,277,562 ('562 patent) and whether an industry in the United States exists as required by subsection (a)(2) of section 337.

The complaint was filed with the Commission on May 11, 2010, under section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337, on behalf Cross Match Technologies, Inc. (CMT or Cross Match). An amended complaint was filed on May 26, 2010. The complainant requested that the Commission issue an exclusion order and a cease and desist order. Named in the notice of investigation as respondents and served with the complaint were Suprema, Inc. (Suprema) and Mentalix, Inc. (Mentalix).

Order No. 3, which issued on July 1, 2010, set a sixteen month target date of October 17, 2011,[1] which meant that any final initial determination on violation should be filed no later than June 17, 2011.

---

[1] The notice of investigation was published on June 17, 2010 (Fed. Reg. No. 116 at 34482-3).

Order No. 11, which issued on September 16, 2011, put into effect a stipulation regarding importation of respondents' accused products.

Order No. 12, which issued on October 14, 2010, granted complainant's Motion No. 720-6 to amend the complaint, to add allegations of infringement by respondents of claims 5, 6, 12, and 30 of the '562 patent and claims 7, 15, 19, and 45 of the '344 patent. The Commission non-reviewed Order No. 12 on November 10, 2010.

Order No. 15, which issued on December 1, 2010, terminated the investigation as to claims 6, 7, 8, 13, 14, 15,19, 20 and 21 of the '932 patent, claims 13 and 16 of the '993 patent, claims 4, 15, 30, 32 and 44 of the '344 patent and claim 2 of the '562 patent. The Commission non-reviewed Order No. 15 on December 27, 2010.

Order No. 24, which issued on February 16, 2011, granted complainant's Motion No. 720-26 that it satisfies the economic prong of the domestic industry requirement. The Commission non-reviewed Order No. 24 on March 11, 2011.

Order No. 27, which issued on March 1, 2011 put into effect a stipulation regarding withdrawal of affirmative defenses of equitable estoppel, acquiescence and/or waiver.

A telephonic pre-hearing conference was held on March 2, 2011 at which arguments were heard on motions in limine. A settlement conference was conducted at the Commission on March 3, 2011. A pre-hearing conference was conducted on March 7 at which rulings were made on said motions in limine. The evidentiary hearing followed on March 7 and continued on March 8, 9, 10 and 11.[2] In issue, inter alia, are claims 10, 11, 12, 15, 17 and 18 of the '993

[2] Order No. 30, which issued on March 18, 2011, denied complainant's Motion No. 720-39 for reconsideration of the administrative law judge's grant of respondents' oral motion at the evidentiary hearing on March 8, 2011 to strike certain expert testimony of complainant's

patent, claims 1, 7, 19, 41, 42, 43 and 45 of the '344 patent and claims 1, 5, 6, 7, 12 and 30 of the '562 patent.

The Final Initial and Recommended Determinations are based on the record compiled at the hearing and the exhibits admitted into evidence. The administrative law judge has also taken into account his observation of the witnesses who appeared before him during the hearing.

McWilliams.

In a filing dated March 17, 2011, respondents, in unopposed Motion No. 720-40, moved to correct the record by admitting into evidence CX-596C rather than RX-596C which was done at the hearing. Motion No. 720-40 is granted.

In a filing dated March 18, 2011, complainant in Motion No. 720-41 moved to declassify RPX-348C and associated testimony which it was alleged "collectively depict and narrate a simple demonstration of Respondent Suprema's publicly available and observable RealScan-10 product." The Commission Investigative Staff (staff), in a response dated March 28, 2011, argued that the pending motion should be denied if respondent Suprema is able to properly support its allegation that the demonstration in question reveals confidential and commercially-damaging information. Making reference to respondents' opposition dated March 28, 2011 and in particular the second complete paragraph on page 4 and the bridging paragraph on pages 8-9 referencing the accompanying declaration of Bong Seop Song, complainant's Motion No. 720-41 is denied.

In a filing dated March 18, 2011, complainant in Motion No. 720-42 moved to limit the use of, or strike, improper questions and hearing testimony relating to deposition testimony not admitted into evidence. Each of respondents and the staff in filings argued that said motion should be denied. Complainant, in support, argued that respondents improperly read into the record misleadingly cropped and non-representative quotes from inventor McClurg's deposition testimony during cross-examination of complainant's expert. Complainant however made the same argument it is raising in its Motion No. 720-42 at the hearing and was overruled (Tr. at 887-95). Hence said Motion No. 720-42 is in fact a motion for reconsideration. However complainant in its Motion No. 720-42 does not cite any new facts or evidence or an intervening change in controlling law. See Order No. 30. Moreover use of contradictory evidence to impeach an expert (or other witness) is well recognized. See 4 Weinstein's Federal Evidence at 607.066[1] (2d ed. 2009). Hence Motion No. 720-42 is denied.

In a filing dated April 8, 2011, respondents, in unopposed Motion No. 720-43, moved to correct the record by providing corrected RDX5-28 which related to the direct examination of respondents' expert Sasian. Motion No. 720-43 is granted.

Proposed findings of fact submitted by the parties not herein adopted, in the form submitted or in substance, are rejected as not supported by the evidence, as involving immaterial matters, and/or as irrelevant. Certain findings of fact included herein have references to supporting evidence in the record. Such references are intended to serve as guides to the testimony and exhibits supporting the finding of fact. They do not necessarily represent complete summaries of the evidence supporting said findings.

II. Jurisdiction Including Parties And Importation

Section 337(a)(1)(B) declares unlawful, inter alia, "[t]he importation into the United States, the sale for importation, or the sale within the United States after importation by the owner, importer, or consignee, of articles that . . . infringe a valid and enforceable United States patent." 19 U.S.C. § 1337(a)(1)(B). Complainant has filed a complaint alleging a violation of this subsection. See 75 Fed. Reg. 34482 (June 17, 2010). The Commission therefore has subject matter jurisdiction. See Amgen, Inc. v. United States Int'l Trade Comm'n, 902 F.2d 1532, 1535-37 (Fed. Cir. 1990).

In addition, respondents have appeared and participated in the investigation. (See, e.g., Tr. at 7). The Commission therefore has personal jurisdiction over the respondents. See, e.g., Certain Liquid Crystal Display Modules, Products Containing Same, and Methods for Using the Same, Inv. No. 337-TA-634, Final Initial and Recommended Determinations at 3 (June 12, 2009) (unreviewed).

Jurisdiction over specific property, known as in rem jurisdiction, is the power of an agency to decide a particular case involving a specific piece of property that is within the control of the agency. Steel Rod Treating Apparatus, Inv. No. 337-TA-97 (USITC Pub. No. 1210 at 4

(1981).[3] The parties have stipulated that at least some accused products, viz. RealScan-D, RealScanF, RealScan-10, RealScan-G2, and RealScan-G10 have been imported into the United States. (See Order Nos. 11 and 18). The Commission therefore has in rem jurisdiction over the accused products. See, e.g., Sealed Air Corp. v. United States Int'l Trade Comm'n, 645 F.2d 976, 985-86 (C.C.P.A. 1981).

III. Technology Of The Patents In Issue

The private parties, after consultation with the staff, have stipulated regarding the technology of the three patents in issue. See Order No. 29. Thus pursuant to said stipulation, generally the technology at issue in this investigation involves systems and methods related to biometrics and the scanning of biometric objects such as fingers. Both complainant Cross Match and respondent Suprema manufacture hardware and provide software for scanning fingerprints. Respondent Mentalix provides software for scanning fingerprints. The products at issue in this investigation involve fingerprint scanners that use optical systems, a light source and a sensor to obtain images of fingerprints. The fingerprint scanners contain a surface known as a "platen" upon which the user places finger(s). Inside the fingerprint scanner, a series of optical elements focus light to obtain an image of the fingerprint and a camera scans the fingerprint image.

Also pursuant to said stipulation a goal of optical systems is to form a real image of the object being captured. A real image is an image capable of being projected on a screen. Field curvature is one type of optical aberraion that causes a sharp image to fall on a curved surface, rather than a sharp image on a flat surface. Other types of optical aberrations include spherical aberration, coma, astigmatism, or distortion. Another concept in optics is telecentricity. In a

---

[3] See FF 1-7 in Section XIV, infra, for identification of private parties.

telecentric system, the chief ray (i.e., the center ray) of every light ray bundle is parallel to the axis on the object side, image side, or both.

The fingerprint scanners at issue in this investigation use software to process the fingerprint images. Certain hardware manufacturers, including Cross Match and Suprema, include demonstration programs with their fingerprint scanners. Cross Match and Suprema provide Software Development Kits (SDKs) that allow customers to create their own software to operate the scanner. The SDKs include dynamic link libraries (dlls) that include functions that operate various functionalities of fingerprint scanners. The SDKs also include manuals instructing customers on how to use the SDK. Other companies, such as Mentalix, sell software for use with fingerprint scanners sold by other companies, such as Cross Match and Suprema.

IV. The '993 Patent

The '993 patent, entitled "Lens Systems for Use in Fingerprint Detection," was filed on May 9, 1997 and issued on May 4, 1999. (JX-1.) Ellis Betensky is the sole inventor of the '993 patent. (JX-1.) Cross Match is the assignee of the '993 patent. (JX-7 at 2.) Asserted claims of the '993 patent are independent claim 10 and dependent claims 11, 12, 15, 17 and 18.

The abstract of the '993 patent states:

> Lens systems for use in fingerprint detection systems employing frustrated total internal reflection are provided. The systems include an aperture stop and three lens units. The first lens unit has a positive power, is located on the object side of the aperture stop, and forms a telecentric pupil for the lens systems. The second lens unit has a positive power, is located on the image side of the first lens unit, and forms a real image of the object. In certain embodiments, the third lens unit is located between the first and second lens units and has substantially a focal cylindrical power. In other embodiments, the third lens unit serves to correct the field curvature of the image contributed by the first and second

lens units.

(JX-1 at Abstract). According to the '993 patent, its FIELD OF INVENTION relates to lens systems and, in particular, to lens systems for use in fingerprint detection where an image of fingerprint ridges is produced by means of frustrated total internal reflection at the titled face of a prism. (JX-1 at 1:5-8.)

A. Claims In Issue

Complainant has put in issue claims 10, 11, 12, 15, 17 and 18 of the '993 patent. Claim 10 is an independent claim, and reads:

> An optical system having an optical axis, said system forming an image of an object and comprising:
>
> > a) a prism having a first surface for contacting the object and a second surface, said first surface being oriented with respect to the optical axis at an angle greater than the angle of total internal reflection of the surface;
> >
> > b) an aperture stop;
> >
> > c) a first lens unit having a positive power between the aperture stop and the prism for forming a telecentric entrance pupil;
> >
> > d) a second lens unit having a positive power for forming a real image of the object, said second lens unit being on the image side of the first lens unit; and
> >
> > e) a third lens unit for correcting the field curvature of the image contributed by the first and second lens units.
>
> (JX-1 at 10:18-34.)
>
> Claim 11 of the '993 patent depends from claim 10, and reads:
>
> > The optical system of claim 10 wherein the first lens unit comprises at least one aspherical surface.

(JX-1 at 10:35-36.)

Claim 12 of the '993 patent depends from claim 10, and reads:

> The optical system of claim 10 wherein the first lens unit consists of a single lens element.

(JX-1 at 10:37-38.)

Claim 15 of the '993 patent depends from claim 10, and reads:

> The optical system of claim 10 wherein the third lens unit has a negative power.

(JX-1 at 10:43-44.)

Claim 17 of the '993 patent depends from claim 10, and reads:

> The optical system of claim 10 wherein the third lens unit comprises an aspherical surface.

(JX-1 at 10:48-49.)

Claim 18 of the '993 patent depends from claim 10, and reads:

> The optical system of claim 10 wherein the third lens unit consists of a single lens element.

(JX-1 at 10:50-51.)

V. The '344 And '562 Patents

The '344 patent is entitled "Biometric Imaging System and Method," and issued on April 10, 2007, to named inventors George W. McClurg, John F. Carver, Walter G. Scott, and Gregory Zyzdryn. (JX-2 cover).

The '344 patent is based on Appl. No. 10/345,420 filed on January 17, 2002. (Id.) The '344 patent is assigned to complainant CMT. (JX-8.) With respect to any cross-reference to

related applications, the '344 patent states:

> The present application claims the benefit of U.S. Provisional Patent Application No. 60/348,678, filed on Jan. 17, 2002, which is incorporated by reference herein in its entirety.
>
> The present application is related to U.S. patent application Ser. No. 10/345,366, filed concurrently herewith, which is incorporated by reference herein in its entirety.
>
> The present application is related to U.S. patent application Ser. No. 10/050,046, filed Jan. 17, 2002 (now U.S. Pat. No. 6.954.260 that issued Oct. 11. 2005), and entitled "Systems and Methods For Illuminating A Platen In A Print Scanner," and U.S. patent application Ser. No. 10/047,983, filed on Jan. 17, 2002 (now U.S. Pat. No. 6,809,303 that issued Oct. 26, 2004), and entitled "Platen Heaters For Biometric Image Capturing Devices," which are both incorporated by reference herein in their entireties.

(JX-2 at 1:7-23.)

The abstract of the '344 patent reads:

> A method and system of obtaining a ten-print plain impression fingerprint includes scanning a print image, processing the scanned image, separating the processed image into individual fingerprint images, and determining how many print images have been scanned. The method also includes comparing the print image to a previously scanned print image, quality classifying the separated images, indicating a quality classification of the print image based on the classifying step, and determining whether the print image is of a good quality. The system can include a ten-print scanner having a finger guide and a platen used to position four finger slaps onto the platen.

(JX-2.) According to the '344 patent, the field of invention is generally related to biometric imaging systems and more particularly to a fingerprint imaging system. (JX-2 at 1:27-30.)

The '562 patent is entitled "Biometric Image Capture System and Method," and issued on October 2, 2007, to named inventor Gregory Zyzdryn. (JX-3, cover). The '562 patent is

based on Appl. No. 10/631,890 filed on August 1, 2003. (Id.). The '562 patent is assigned to complainant CMT. (JX-9). With respect to any cross-reference to related applications, the '562 patent states:

> The present application claims the benefit of U.S. Provisional Patent Application No. 60/348,678, filed on Jan. 17, 2002, which is incorporated by reference herein in its entirety.
>
> The present application is related to U.S. patent application Ser. No. 10/345,420 and U.S. patent application Ser. No. 10/345,366, both filed on Jan. 16, 2003, which are incorporated by reference herein in their entireties.

(JX-3 at 1:7-15.) As indicated supra said Ser. No. 10/345,420 is the application on which the '344 patent is based.

The abstract of the '562 patent reads:

> A method of reliably capturing biometric print images includes determining the print quality of a scanned image, detecting prints in the scanned image, and determining whether the scanned image is ready for capture. The method includes filtering the scanned image, binarizing the filtered image, detecting print area, print contrast, and print shape of the binarized image, and separating the print image into individual print images based on the print area, contrast, and shape. Each individual print image is classified base on a predetermined quality threshold and a quality classification of each individual print image is indicated. The method includes a predetermined capture delay time period, quality time period, and scanner timeout period. An operator can annotate issues regarding missing or unacceptable print images. A system of reliably capturing biometric print images includes a scanner including a print capture manager, a computer, and a communication link between the computer and scanner.

(JX-3.) According to the '562 patent, the field of invention, like the '344 patent, is generally related to biometric imaging systems. However more particularly, the invention of the '562 patent is related to reliable obtainment of quality biometric print images. (JX-3 at 1:19-22.)

The first chapter of a handbook by Davide Maltoni et al., provides a general background on biometrics, fingerprints, and fingerprint imaging. (SX-16 at 1:50.) (SFF 11 (undisputed).)

A. Claims In Issue Of The '344 Patent

Complainant has put in issue claims 1, 7, 19, 41, 42, 43 and 45.

Claim 1 of the '334 patent is an independent claim, and reads:

> A method for capturing and quality classifying fingerprint images, the method comprising:
>
> (a) scanning a plurality of fingers substantially simultaneously;
>
> (b) capturing data representing a combined image of a corresponding plurality of fingerprints;
>
> (c) using concentrations of black pixels arranged in oval-like shapes in the combined image to determine individual fingerprint areas and shapes;
>
> (d) separating the combined image into individual fingerprint images;
>
> (e) comparing each of the separated individual fingerprint images to a corresponding previously captured acceptable fingerprint image;
>
> (f) quality classifying the separated individual fingerprint images as being either acceptable, possibly acceptable, or unacceptable according to the comparing step (e);
>
> (g) indicating the quality classification of each of the individual fingerprint images based on the quality classifying step (f); and
>
> (h) determining whether the processed combined image is of a good quality.

(JX-2 at 17:57-18:11.)

Claim 7 of the '344 patent depends from claim 1, and reads:

The method of claim 1, wherein when the determining step (h) determines the combined image is of the good quality, the method further comprises:

> (i) determining whether the combined image is captured from a left or a right hand.

(JX-2 at 18:43-46.)

Claim 19 of the '344 patent is an independent claim, and reads:

A method for capturing and processing a fingerprint image, the method comprising:

> (a) scanning one or more fingers;
>
> (b) capturing data representing a corresponding fingerprint image;
>
> (c) filtering the fingerprint image;
>
> (d) binarizing the filtered fingerprint image;
>
> (e) detecting a fingerprint area based on a concentration of black pixels in the binarized fingerprint image;
>
> (f) detecting a fingerprint shape based on an arrangement of the concentrated black pixels in an oval-like shape in the binarized fingerprint image; and
>
> (g) determining whether the detected fingerprint area and shape are of an acceptable quality.

(JX-2 at 19:24-37.)

Claim 41 of the '344 patent is an independent claim, and reads:

A system, comprising:

> a platen that receives a plurality of fingers or thumbs;
>
> a scanner that substantially simultaneously scans the plurality of fingers or thumbs on the platen;

an image capturer that captures data representing a corresponding combined fingerprint image of the plurality of fingers or thumbs;

a processor that processes the combined fingerprint image;

a separator that separates the processed combined fingerprint image into individual fingerprint images;

a comparator that compares the captured fingerprint image to a previously obtained acceptable fingerprint image;

a classifier that classifies each of the separated individual fingerprint images as being either acceptable, possibly acceptable, or unacceptable according to results of the comparison;

an output device that indicates a classification of each of the individual fingerprint images based on the classifier; and

an image quality determining device that determines whether the captured combined fingerprint image is of a good quality.

(JX-2 at 21:44-22:22.)

Claim 42 of the '344 patent depends from claim 41, and reads:

The system of claim 41, wherein the processor comprises:

a filter that filters the combined fingerprint image; and a binarizor that binarizes the filtered combined fingerprint image.

(JX-2 at 22:23-27.)

Claim 43 of the '344 patent depends from claim 42, and reads:

The system of claim 42, wherein the processor further comprises:

an area determining device that determines an area of each of the individual fingerprint image based on a concentration of black pixels in the binarized combined image.

(JX-2 at 22:28-34.)

Claim 45 of the '344 patent depends from claim 41, and reads:

> The system of claim 41, further comprising a hand determination device that determines which hand(s) the plurality of fingers or thumbs belongs to.

(JX-2 at 22:41-43.)

B. Claims In Issue Of The '562 Patent

Complainant has put in issue claims 1, 5, 6, 7, 12 and 30. Claim 1 is an independent claim, and reads:

> A method for reliably capturing print images, comprising:
>
> (a) initiating camera operation within a scanner;
>
> (b) scanning a biometric object to obtain a scanned image;
>
> (c) processing the scanned image;
>
> (d) determining print quality of individual print images in the scanned image;
>
> (e) detecting prints in the scanned image; and
>
> (f) determining whether the scanned image is ready for capture based on an expected number of prints detected in step (e) and the quality of the print images determined in step (d).

(JX-3 at 10:59-11:4.)

Claim 5 of the '562 patent depends from claim 1, and reads:

> The method of claim 1, further comprising:
>
> (g) scanning the biometric object to obtain a subsequent scanned image;
>
> (h) processing the scanned image;
>
> (i) determining print quality of individual print images in the

scanned image;

(j) detecting prints in the scanned image; and

(k) determining whether the scanned image is ready for capture based on an expected number of prints detected in step (j) and the quality of the prints determined in step (i),

when the detecting step (e) determines that no prints are detected, and a predetermined timeout period has not expired.

(JX-3 at 11:38-51.)

Claim 6 of the '562 patent depends from claim 1, and reads:

The method of claim 1, further comprising timing out the scanner when the detecting step (e) determines that no prints are detected, and a predetermined timeout period has expired.

(JX-3 at 11:52-55.)

Claim 7 of the '562 patent depends from claim 1, and reads:

The method of claim 1, further comprising:

(g) scanning the biometric object to obtain a subsequent scanned image;

(h) processing the scanned image;

(i) determining print quality of individual print images in the scanned image;

(j) detecting prints in the scanned image; and

(k) determining whether the scanned image is ready for capture based on an expected number of prints detected in step (j) and the quality of the print images determined in step (i), when determining step (f) determines at least one of the following conditions:

that the expected number of prints is not present within the scanned image, and

that the expected prints are not all of good quality, and a predetermined quality time period has not expired.

(JX-3 at 11:56-12:7.)

Claim 12 of the '562 patent depends from claim 1, and reads:

> The method of claim 1, wherein when the determining step (f) determines that a state exists where the expected number of prints is present within the scanned image and that the expected prints are all of good quality, further comprising determining whether the state changes during a predetermined capture delay time period.

(JX-3 at 12:40-45.)

Claim 30 of the '562 patent is an independent claim, and reads:

A method for reliably capturing print images, comprising:

> (a) initiating camera operation within a scanner;
>
> (b) scanning a biometric object to obtain a scanned image;
>
> (c) processing the scanned image;
>
> (d) determining print quality of individual print images in the scanned image;
>
> (e) detecting prints in the scanned image; and
>
> (f) determining whether the scanned image is ready for capture based on an expected number of prints detected in step (e) and the quality of the print images determined in step (d), wherein the scanned image is ready for capture when the expected number of prints is present within the scanned image and the expected prints are all of good quality within a predetermined capture delay time period.

(JX-3 at 14:43-50.)

VI. Experts

Professor Roger McWilliams was qualified as complainant's technical expert in the area of optics and optical systems, image detection and reconstruction, which includes the use of optical systems detecting biometric objects and signal processing, including the use of software with optical systems detecting biometric objects. (Tr. at 369.)

Jose Manuel Sasian Alvarado (Sasian) was qualified as respondents' expert in optics, lens design, and optical systems, including fingerprint imaging systems. (Tr. at 1227.)

Creed Jones III was qualified as respondents' expert in biometrics, including fingerprints, fingerprint imaging and software programming. (Tr. at 1383.)

VII. Skill Level Of One Of Ordinary Skill In The Art

A. The '993 Patent

A person of ordinary skill in the art of the '993 patent would have had either "at least a Bachelor's degree in physics or engineering with at least one year of experience in optics and image detection, including experience in biometrics" (McWillaims, Tr. at 374) or "a Bachelor's degree in physics, science, technology or the equivalent and, in addition, some specialized courses in geometrical optics, lens design, or about three years of equivalent experience." (Sasian, Tr. at 1231.)

B. The '344 And '562 Patents

A person of ordinary skill in the art of the '344 and '562 patents would have a Bachelor's degree in physics, electrical engineering, computer engineering, computer science or in an equivalent field and at least a year to three years experience in image detection and processing, focused in the area of software, software code, or design including implementing

biometric standards. (McWilliams, Tr. at 376; Jones, Tr. at 1422-26, 1522-23.)

VIII. Claim Construction

The claims of a patent define the invention to which the patentee is entitled the right to exclude. Phillips v. AWH Corp., 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (Phillips). The words of a claim are generally given their ordinary and customary meaning. Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996). The ordinary and customary meaning of a claim term is the meaning the term would have to a person of ordinary skill in the art at the time of the invention, i.e., constructively the effective filing date of the patent application. Phillips, 415 F.3d at 1313. The ordinary meaning of a claim term as understood by a person of ordinary skill in the art may in some circumstances be readily apparent to laymen. See Brown v. 3M, 265 F.3d 1349, 1352 (Fed. Cir. 2001). However, "[w]hen the parties present a fundamental dispute regarding the scope of a claim term, it is the court's duty to resolve it." O2Micro Int'l Limited v. Beyond Innovation Technology Co., 521 F.3d 1351, 1362 (Fed. Cir. 2008). When giving a claim term meaning, "the person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification." Phillips, 415 F.3d at 1313. However, in order to construe a claim term contrary to its ordinary meaning, a party "must establish the inventors demonstrated an intent to deviate from the ordinary and accustomed meaning of a claim term by including in the specification expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope." Epistar Corp. v. International Trade Comm'n, 566 F.3d 1321, 1334 (Fed. Cir. 2009) (citations omitted). In construing the claims, the court should also consider "the patent's prosecution history, if it is in evidence." Markman

v. Westview Instruments, Inc., 52 F.3d 967, 976, 980 (Fed. Cir. 1995).

While information extrinsic to the patent and its prosecution history may be considered, it is often "less reliable than the patent and its prosecution history." Phillips, 415 F.3d at 1318 (noting that litigation-derived expert reports and testimony are especially suspect). "[E]xpert testimony at odds with the intrinsic evidence must be disregarded." Network Commerce, Inc. v. Microsoft Corp., 422 F.3d 1353, 1361 (Fed. Cir. 2005) (holding that unsupported conclusions concerning patent claims provide little support for suggested claim construction). Not all extrinsic information, however, must be disregarded. For example:

> [i]n some cases, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words. See Brown v. 3M,265 F.3d 1349, 1352 (Fed Cir. 2001) (holding that the claims did "not require elaborate interpretation"). In such circumstances, general purpose dictionaries may be helpful.

Phillips 415 F.3d at 1314. However, in many cases that give rise to litigation, determining the ordinary and customary meaning of a claim requires examination of terms that have a particular meaning in a field of art. Because the meaning of a claim term as understood by persons of skill in the art is often not immediately apparent, and because patentees frequently use terms idiosyncratically, the court looks to those sources available to the public that show what a person of skill in the art would have understood disputed claim language to mean. Id. Those sources include the words of the claims themselves, the remainder of the specification, the prosecution history, and extrinsic evidence concerning relevant scientific principles, the meaning of technical terms, and the state of the art. See Gemstar-TV Guide Int'l, Inc. v. Int'l

Trade Comm'n, 383 F.3d 1352, 1364 (Fed. Cir.2004); Vitronics, 90 F.3d at 1582-83; Markman, 52 F.3d at 979-80.

The preamble of a claim may be significant in interpreting a claim. Thus, "a claim preamble has the import that the claim as a whole suggests for it." Bell Commc'ns Research, Inc. v. Vitalink Commc'ns Corp., 55 F.3d 615,620, 34 U.S.P.Q.2d 1816, 1820 (Fed. Cir. 1995). If said preamble, when read in the context of an entire claim, recites limitations of the claim, or if the claim preamble is "necessary to give life, meaning, and vitality"' to the claim, then the claim preamble should be construed as if in the balance of the claim. Kropa v. Robie, 187 F.2d 150, 152 (CCPA 1951) (Kropa); see also Rowe v. Dror, 112 F.3d 473,478 (Fed. Cir. 1997) (Rowe); Coming Glass Works v. Sumitomo Elec. U.S.A., Inc., 868 F.2d 1251, 1257 (Fed. Cir. 1989) (Coming Glass). Indeed, when discussing the "claim" in such a circumstance, there is no meaningful distinction to be drawn between the claim preamble and the rest of the claim, for only together do they comprise the "claim." If however, the body of the claim fully and intrinsically sets forth the complete invention, including all of its limitations, and the preamble offers no distinct definition of any of the claimed invention's limitations, but rather merely states, for example, the purpose or intended use of the invention, then the preamble may have no significance to claim construction because it cannot be said to constitute or explain a claim limitation. See Rowe, 112 F.3d at 478: Corning Glass, 868 F.2d at 1257; Kroga, 187 F.2d at 152. In Pitney Bowes Inc. v. Hewlett-Packard Co., 182 F. 3d 1298, 1306 (Fed. Cir. 1999) (Pitney Bowes), the preamble statement that the patent claimed a method of or apparatus for "producing on a photoreceptor an image of generated shapes made up of spots" was not merely a statement describing the invention's intended field of use. Instead, the Court found that said

statement was intimately meshed with the ensuing language in the claim; and that, for example, both independent claims concluded with the clause "whereby the appearance of smoothed edges are given to the generated shapes." Id. Because this was the first appearance in the claim body of the term "generated shapes," the Court found that the term could only be understood in the context of the preamble statement "producing on a photoreceptor an image of generated shapes made up of spots." Id. Similarly, the Court found that the term "spots" was initially used in the preamble to refer to the elements that made up the image of generated shapes that were produced on the photoreceptor; that the term "spots" then appeared twice in each of the independent claims; and that the claim term "spots" referred to the components that together made up the images of generated shapes on the photoreceptor and was only discernible from the claim preamble. Id. The Court concluded that in such a case, it was essential that the preamble and the remainder of the claim be construed as one unified and internally consistent recitation of the claimed invention. Id.

A. The '993 Patent

1. The claimed phrase "optical system"

The claimed phrase "optical system" is found in the preamble of asserted independent claim 10, and in each of asserted dependent claims 11, 12, 15, 17 and 18.[4]

Complainant argued that the claimed phrase "optical system" should be construed according to its ordinary meaning as understood by one skilled in the art at the time of the invention of the'993 patent: "a collection of optical elements in a specified configuration to act

[4] Each of the dependent claims uses the phrase "The optical system of claim 10..." to refer back to asserted claim 10.

on light." (CBr at 22.) Complainant further argued that said claimed phrase cannot be limited to "only lens elements" and to exclude "distortion correcting prisms, holographic optical elements, or off-axis optics..." (CBr at 14-15); and that there has been no disavowal of claim scope based on the descriptions of the prior art. (CBr at 20-22.)

Respondents argued that the '993 patent disavows the use of non-lens elements and off-axis optics in its description of the objects of the invention, its criticism of the prior art, and in its demeaning the use of non-lens elements. (RBr at 182.) Thus, while respondents do not dispute that the term "optical system" is typically understood to include both lens and non-lens elements and that an optical system is a collection of optical elements in a specified configuration to act on light (see CFF IV.B.2.a.10 (undisputed)), respondents argued that the claimed phrase "optical system" should be construed to mean, "a system comprising a lens system which employs only lens elements, and excluding distortion correcting prisms, holographic optical elements and off-axis optics." (RBr at 195 (emphasis added).) Respondents further clarified said construction stating that the "disclaimers... in the '993 specification relate only to 'lens systems,' not the broader context of optical systems," and thus, the optical system includes non-lens elements and the lens system does not. (RBr at 195.) Respondents further argued that nothing in the '993 patent teaches or otherwise suggests that the lens system of the invention may include non-lens elements, distortion correcting prisms, holographic optical elements, or off-axis optics. (RBr at 193.) Finally, respondents argued that the disavowal of claim scope should be applied to the claim phrases "first lens unit having a positive power," "between the aperture stop and the prism," "second lens unit having a positive power," "said second lens unit being on the image side of the first lens unit," and "third lens unit" such that

each of these additional claim phrases should be construed to exclude non-lens elements, distortion correcting prisms, holographic optical elements, and off-axis optics. (RBr at 196.)

The staff argued that "optical system" although appearing in the preamble of asserted claim 10, is a limitation on the claim. (SBr at 15.) The staff also argued that nothing in the '993 patent changes the meaning of "optical system" such that it should be limited as suggested by respondents (SBr at 16) and that there has been no disclaimer with respect to the prior art (SBr at 17-18). Thus, the staff argued that "reading the claims to preclude the use of non-lens elements and off-axis optics would be reading the specification into the claims rather than reading the claims in view of the specification." (SRBr at 6.) The staff agreed with complainant that the term "optical system" should be given its plain meaning, which is consistent with complainant's proposed construction "a collection of optical elements in a specified configuration to act on light." (SBr at 19.)

The phrase "optical system" appears only in the preamble of independent claim 10 of the '993 patent. The parties do not dispute that an "optical system" is the "widest designation for a group of optical elements that may comprise lenses, prisms, refractive optical elements, mirrors, gratings, holographic optical elements, distortion correcting prisms, non-lens elements, and filters" (CFF IV.B.2.a.9 (undisputed in relevant part)); that the plain meaning of optical system can be defined as "a collection of optical elements in a specified configuration to act on light" (CFF IV.B.2.a.10 (undisputed)); and that the optical system of independent claim 10 may include both lens and non-lens elements (CFF IV.B.2.a.6 (undisputed in relevant part)).

With respect to the preamble of claim 10 of the '993 patent, the staff argued that the preamble of this claim is a limitation (SBr at 15, n. 4), and the private parties were silent regarding whether the preamble is limiting on claim 10. The full preamble of claim 10 of the '993 patent reads:

> An optical system having an optical axis, said system forming an image of an object and comprising:

(JX-1 at 10:18-19.) Thus, the preamble recites a requirement of having an "optical axis." Element a) of asserted claim 10 reads:

> a) a prism having a first surface for contacting the object and a second surface, said first surface being oriented with respect to the optical axis at an angle greater than the angle of total internal reflection of the surface

(JX-1 at 10:21-24). Thus, element a) refers to "the optical axis" which has the preamble as the only antecedent. The preamble also requires that the optical system "form[] an image of an object...," which provides the only antecedent basis for both "the object" recited in elements a) and d) and "the image" recited in elements d) and e). Hence, the administrative law judge finds that the preamble is "necessary to give life, meaning, and vitality" to asserted claim 10, and that therefore the preamble is limiting on said claim 10. Kropa, 187 F.2d at 152.

Said preamble of claim 10 indicates that elements a) through e) in the claim are part of the "optical system" claimed in its use of the word "comprising," and said open-ended transitional term "comprising" in the preamble indicates that the "optical system" claimed can include elements beyond those listed in the claim. Further, none of said elements a) through e) of claim 10 include language limiting the number and type of elements that can be included in the "optical system." Accordingly, the administrative law judge finds that one of ordinary skill

in the art would understand from the claim language that the claimed optical system and each of elements a) through e) in said optical system could include non-lens elements, distortion correcting prisms, holographic optical elements and off-axis optics. Said understanding is consistent with the finding that the preamble is limiting on claim 10; the finding that said preamble includes the open-ended transitional term "comprising;" and the parties' agreed-on plain meaning of optical system, which is "a collection of optical elements in a specified configuration to act on light." (CFF IV.B.2.a.10 (undisputed).)

Referring to the specification of the '993 patent, it includes two particular objects of the invention:

> In view of the foregoing, it is an object of the invention to provide improved lens systems for use in fingerprint detection. In particular, it is an object of the invention to provide lens systems which employ only lens elements and do not employ distortion correcting prisms, holographic optical elements, or off-axis optics.
>
> A further object of the invention is to provide inexpensive lens systems for use in fingerprint detection systems. In particular, it is an object of the invention to provide lens systems for use in fingerprint detection which comprise molded lens elements which can be produced in large quantities at low cost.

(JX-1 at 1:46-57 (emphasis added).) Thus, while one object of the invention is to provide a lens system with only lens element, the second object seeks to provide a lens system comprising molded lens elements to reduce costs. Further, in describing the two separate aspects of the invention, the patentee again used open-ended language to describe the invention. Thus, the specification states: "[t]o achieve these and other objects, the invention in accordance with a first of its aspects provides an optical system having an optical axis, said system forming an image of an object, e.g. fingerprint ridges, and comprising" (JX-1 at 1:58-61 (emphasis added))

and "[i]n accordance with a second of its aspects, the invention provides an optical system having an optical axis, said system forming an image of an object and comprising" (JX-1 at 2:53-55 (emphasis added).) As found supra, the preamble of independent claim 10 is limiting on claim 10, and said preamble uses the open-ended transitional term "comprising." The administrative law judge further finds that the open-ended language used in both the second object of the invention and the two aspects of the invention would indicate to a person of ordinary skill in the art that the "lens system" referred to in the second object of the invention could include non-lens elements when molded lens elements were also used and the optical systems described in each of the two aspects of the invention could include non-lens elements. Further, regarding the description of the preferred embodiments, the specification of the '993 patent does not include any language precluding the use of non-lens elements, distortion correcting prisms, holographic optical elements, or off-axis optics, and the administrative law judge finds that a person of ordinary skill in the art would understand that the embodiments in the '993 patent could include non-lens elements, distortion correcting prisms, holographic optical elements, or off-axis optics.

Accordingly, the administrative law judge finds that the specification does not limit the meaning of the term "optical system" beyond the plain meaning for "optical system" agreed-upon by the parties supra, and nothing in the specification represents a clear disavowal of claim scope required to limit the meaning of "optical system." See Epistar, 566 F.3d at 1334 (Fed. Cir. 2009) ("[respondent] must establish the inventors demonstrated an intent to deviate from the ordinary and accustomed meaning of a claim term by including in the specification expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope" (citations

omitted)). Thus, the administrative law judge finds that the claim term "optical system" means "a collection of optical elements in a specified configuration to act on light" and does not preclude the use of non-lens elements, distortion correcting prisms, holographic optical elements, or off-axis optics.

Based on said construction of "optical system" supra, the administrative law judge rejects respondents' arguments regarding the disavowal of non-lens elements and off-axis optics with respect to the other elements of claim 10 of the '993 patent. (RBr at 195-196.) Thus, he finds that the claim terms "first lens unit having a positive power," "between the aperture stop and the prism," "second lens unit having a positive power," "said second lens unit being on the image side of the first lens unit," and "third lens unit" are not precluded from containing non-lens elements, distortion correcting prisms, holographic optical elements, or off-axis optics.

Respondents argued that it "is settled law that the patentee's description of 'the invention' as providing lens systems employing 'only lens elements' and not employing 'off-axis optics' mandates that the scope of the asserted claims be limited accordingly." (RBr at 186.) In support of said argument, respondents rely on the first object of the invention supra and four cases: Alloc, Inc. v. International Trade Comm'n, 342 F.3d 1361, 1370 (Fed. Cir. 2003); Certain Combination Motor and Transmission Systems And Devices Used Therin, Inv. No. 337-TA-561, Initial Determination at 31-34 (February 13, 2007) (adopted as Final Determination of Commission on April 30, 2007) (Combination Motor); Certain Automotive Multimedia Display and Navigation Systems, Components Thereof, and Products Containing Same, Inv. No. 337-TA-657, Initial Determination at 47-51 (September 22, 2009) (Automotive Multimedia); Certain Recordable Compact Discs and Rewritable Compact Discs, Inv. No. 337-TA-474, Comm'n Op.

at 47-48 (April 8, 2004) (Recordable Compact Discs). While each of these decisions include a situation where a claim term was limited in scope by the descriptions in the specification, the administrative law judge finds that these decisions do not support respondents' conclusion regarding the scope of the term "optical system" in claim 10 of the '993 patent. In Alloc, the Court concluded that the scope of the claims should be limited because the "specification read as a whole leads to the inescapable conclusion that the claimed invention" should be so limited, and the Court further found that the prosecution history supported limiting the scope of the claims. 342 F.3d at 137-1371 (emphasis added.) In Combination Motor, the claimed phrase "continuously variable" was found to require a peak power output based on "numerous portions where [the specification] links the requirement of peak power output to continuously variable rotational speed" in addition to the peak power requirement being a goal of the invention. Initial Determination at 31-34 (emphasis added). The administrative law judge in Combination Motor also found support for said finding in the prosecution history for the patent at issue. Id. In Automotive Multimedia, the administrative law judge construed the term "selectable frequency tuning portion" to require the ability to receive direct text entry based not only on an object of the invention but also on multiple other references in the specification describing the "selectable frequency tuning portion" as having the capability of receiving direct text entries. Inv. No. 337-TA-657, Initial Determination at 48-49. In Recordable Compact Discs, the scope of the claims was found to be limited to the use of a single laser beam based on an identified problem with using two beams and multiple instances in the specification repeating said problem and the use of a single beam to avoid said problem. Inv. No. 337-TA-474, Comm'n Op. at 47-48. In contrast, the specification of the '993 patent does not provide multiple instances that would lead

to the "inescapable conclusion" that the patentee disavowed the use of non-lens elements. Further, respondents have not identified any portions of the prosecution history that would support such a conclusion. Moreover, as found supra, nothing in the '993 patent specification represents a disavowal of claim scope.

Respondents also argued that the "'993 patent must be construed to exclude lens systems employing non-lens elements because the patentee criticized prior art on that precise ground." (RBr at 187.) Based on the Background of the Invention section of the specification of the '993 patent, the respondents assert that the claim scope "must be limited to reflect the scope of the invention where the patentee has criticized the prior art for including, or lacking a certain feature." (Id. at 187-188 (citing Astrazeneca AB, Aktiebolaget Hassle, KBI-E, Inc. v. Mutual Pharmaceutical Co., Inc., 384 F.3d 1333, 1339-40 (Fed. Cir. 2004); Edwards Lifesciences LLC v. Cook Inc., 582 F.3d 1322, 1333 (Fed. Cir. 2009)).) In Astrazeneca, the Federal Circuit found that the patentee had acted as his own lexicographer with respect to the term "solubilizer" when he stated that "[t]he solubilizers suitable according to the invention are defined below." 384 F.3d at 1339 (emphasis added by the Federal Circuit). The Federal Circuit further found that the patentee's lexicography was supported by a clear disavowal of claim scope in the rest of the specification. Id. Further, in Edwards Lifesciences, the conclusion that "a person of ordinary skill in the art would clearly understand" that the claim scope was limited was supported not only by statements in the specification regarding problems in the prior art but also by inventors' statements in the prosecution history indicating that the claim scope was limited. 582 F.3d at 1333 (emphasis added). In contrast, the specification of the '993 patent does not include a specific definition of the term "optical system," and as found supra, the rest of the specification

does not support a disavowal of claim scope and respondents have not identified any portion of the prosecution history that would indicate the patentees intended to limit the scope of the claims.

Further, the specification of the '993 patent includes both the terms "optical system" and "lens system." The parties agree that an optical system has a broader meaning than a lens system, and that the optical system of independent claim 10 includes both lens and non-lens elements. (CFF IV.B.2.a.3 (undisputed); CFF IV.B.2.a.4 (undipsuted in relevant part).) However, in the Background of the Invention section of the '993 patent, the specification only describes optical systems in the prior art:

> A description of some of the problems involved in fingerprint detection using frustrated total internal reflection can be found in Stoltzmann et al., "Versatile anamorphic electronic fingerprinting: design and manufacturing considerations," SPIE, Vol. 2537, pages 105-116, August 1995. These authors conclude that the optical system used to form the image of the fingerprint ridges should include prisms for correcting optical distortion. In practice, an optical system employing prisms is expensive to manufacture compared to an optical system employing only lens elements, both because prisms themselves are expensive and because collimating optics are required to avoid introducing aberrations.
>
> Significantly with regard to the present invention, Stoltzmann et al. specifically teach away from the use of an optical system employing only lens elements to produce an image of fingerprint ridges. In particular, they state that a system employing cylindrical lenses cannot successfully correct for high levels of horizontal/vertical compression.
>
> As an alternative to distortion correcting prisms, Bahuguna et al., "Prism fingerprint sensor that uses a holographic 30 optical element," Applied Optics, Vol. 35, pages 5242-5245, September 1996, describe using a holographic optical element to achieve total internal reflection without tilting the object (fingerprint

> ridges), thus allowing a rectilinear image of the object to be produced using only lens elements. The use of a holographic optical element, of course, increases the cost and complexity of the optical system.
>
> Hebert, Robert T., "Off-axis optical elements in integrated, injection-molded assemblies," SPIE, Vol. 2600, pages 129-134, December 1995, describes another approach to the fingerprint detection problem, namely, the use of off-axis optics to avoid tilting the object. This approach requires the use of complex optical surfaces which are difficult to manufacture economically.

(JX-1 at 1:10-44 (emphasis added).) Thus, while the specification includes both the terms "optical system" and "lens system," the description of the prior art only refers to optical systems. As found supra, it is undisputed that the optical system of claim 10 of the '993 patent can include non-lens elements, distortion correcting prisms, holographic optical elements, or off-axis optics; and respondents has not pointed to any language in the specification or prosecution history of the '993 patent showing why the patentee's criticism of optical systems in the prior art represents a disavowal of claim scope such that the optical system of claim 10 can include non-lens elements while a lens system within the optical system cannot include non-lens elements.

Respondents further argued that "the claims of the '993 patent must be construed to exclude lens systems employing non-lens elements for the additional reason that the specification demeans the use of non-lens elements and off-axis optics." (RBr at 189.) In support of said argument, respondents cite to Honeywell Intern., Inc. v. ITT Industries, Inc., 452 F.3d 1312, 1320 (Fed. Cir. 2006). In Honeywell, the court concluded that the term "electrically conductive fibers" is limited to the extent that it does not encompass carbon fibers because the specification's "repeated derogatory statements concerning one type of material are the

equivalent of disavowal of that subject matter from the scope of the patent's claims." 452 F.3d at 1319-1320. In contrast, the specification of the '993 patent at issue includes only one statement in the Background of the Invention, quoted supra, regarding each of prisms, holographic optical elements, and off-axis optics and the relative complexity and expense of employing them in optical systems; the parties agree that the optical system of claim 10 of the '993 patent can include non-lens elements, distortion correcting prisms, holographic optical elements, or off-axis optics; and thus, as found supra, the specification does not include a clear disavowal of claim scope.

2. The claimed phrase "optical axis"

The claim phrase "optical axis" appears in both the preamble and element a) of asserted independent claim 10 of the '993 patent. Said preamble states "[a]n optical system having an optical axis, said system forming an image of an object and comprising," and said element a) states "a) a prism having a first surface for contacting the object and a second surface, said first surface being oriented with respect to the optical axis at an angle greater than the angle of total internal reflection of the surface." (JX-1 at 10:19-24.)

Complainant argued that the claim term "optical axis" should be construed according to its plain meaning as understood by one of ordinary skill in the art at the time of the '993 invention, and that said plain meaning is "the common axis of rotation for an axially symmetrical optical system... [or] a line through the centers of curvature of the surfaces which make up the optical system." (CBr at 23 (citing SX-14 at 20 n. 1).) Complainant further argued that optical designs before the invention date of the '993 patent utilized folding mirrors, and the introduction of folding mirrors does not alter the optical axis because it remains an "optically

straight line" as opposed to a "physically straight line." (Id.)

Respondents argued the correct construction of "optical axis" is "a straight line passing by the object, the image and the aperture stop, and about which the optical surfaces have rotational symmetry." (RBr at 198.) Respondents further argued that this "construction is consistent with the use of the term in the industry and prior art, as well as how the term is used in the '993 patent;" that all of the figures of the '993 patent show an optical axis that is a straight line; and that under complainant's construction no optical system would include off-axis optics. (Id.)

The staff argued that complainant's construction is correct and that the dispute between the private parties centers on whether the optical axis must be a straight line or whether it can bend as when the light is reflected by a mirror. (SBr at 19.) The staff further argued that the plain meaning of "optical axis" requires merely that the axis be a line, and not that it be limited to a straight line; that the specification of the '993 patent "appears to assume that the reader will already know what an optical axis is;" and that complainant's construction is consistent with the dictionary definition of optical axis. (Id. at 19-20; SX-19 at 1399.)

The preamble of claim 10 of the '993 patent requires that the optical system have an optical axis and element a) requires that a first surface of a prism is "oriented with respect to the optical axis at an angle greater than the angle of total internal reflection of the surface." (JX-1 at 10:19-24.) As found supra, the preamble is limiting on claim 10, and the administrative law judge further finds no indication in claim 10 that said term "optical axis" should be given a construction beyond its plain meaning as understood by one of ordinary skill in the art at the time of the invention. The parties do not dispute that the plain meaning of the term "optical

axis" is "a line through the centers of curvature of the surfaces which make up the optical system... [which] is the common axis of rotation for an axially symmetrical optical system." (CFF IV.B.2.b.2 (undisputed in relevant part).) Said plain meaning is found in Warren J. Smith, Modern Optical Engineering, 20, n. * (2nd ed. 1990). (JX-13.)

With respect to the specification of the '993 patent, the term "optical axis" is used in seven instances. Four of the said seven instances (JX-1 at 1:60, 1:64, 2:54, 2:58) mirror the use of the term "optical axis" in the claims. Thus, they do not provide any indication that said term should be given a construction beyond its plain meaning. Regarding the three other instances of the use of the term "optical axis" in the specification, the specification reads:

> The aspheric coefficients set forth in Tables 1, 3, and 5 are for use in the following equation:
>
> $$z = \frac{cy^2}{1+[1-(1+k)c^2y^2]^{1/2}} + Dy^4 + Ey^6 + Fy^8 + Gy^{10} + Hy^{12} + Iy^{14}$$
>
> where z is the surface sag at a distance y from the optical axis of the system, c is the curvature of the lens at the optical axis, and k is a conic constant, which is zero except where indicated in the tables. Instead of using the above equation, the aspheric surface for the lens system of Table 2 is defined by an even power polynomial having the coefficients shown in the table, where r is the distance from the optical axis.

(JX-1 at 4:9-21 (emphasis added).) Said portion of the specification does not provide a definition for the term "optical axis." Further, the specification does not provide any other instance of the term "optical axis," and it also does not provide any indication that the patentee intended to act as his own lexicographer with respect to the term "optical axis." Thus, the administrative law judge finds that the specification of the'993 does not provide a definition of

the term "optical axis" but rather that the patentee intended the term "optical axis" be given its plain meaning as understood by one of ordinary skill in the art as of the date of invention.

The plain meaning of "optical axis" supra is also supported by the testimony of complainant's expert McWilliams, who testified:

> THE WITNESS: The optical axis is normally commonly thought of as a common axis, a symmetry of a lens or optical system. I cite below Warren Smith's book Modern Optical Engineering. And that's the normal way we think about things.
>
> The Respondents are asking to construe it as "a straight line passing by the object, the image, and the aperture stop, and about which the optical surfaces have rotational symmetry."
>
> I believe that one way to interpret Respondents' construction is that it is one and only one straight line, that you can't have any bends or kinks in it. You can't have a mirror that folds the optical axis.
>
> I pointed out in my rebuttal that that is not a standard way of viewing the optical axis, that it is common in optical systems to use the mirrors to fold or bend the optical axis, and we still think about it as the optical axis even though it has the bend or the fold in it.

(Tr. at 481-482 (emphasis added).) In contrast, respondents' expert Sasian testified regarding the term optical axis:

> Q. Thank you. Can we pull up JX-1 and the preamble of claim 10, please.
>
> Dr. Sasian -- well, let me wait. Up on the screen we have the preamble of claim 10. And as you can see, it states that -- it recites "an optical system having an optical axis, said system forming an image of an object and comprising."
>
> Dr. Sasian, in your opinion how a person of ordinary skill in the art construe the term "optical axis"?

A. In view of the context of the '993 patent, a person of ordinary skill would construe an optical axis as a straight line passing through the object, the image, the aperture stop, and about which the optical surfaces have rotational symmetry.

(Tr. at 1284 (emphasis added).) Thus, Sasian testified that the context of the '993 patent requires a construction different than the plain meaning. However, Sasian provided no support in the intrinsic evidence for his conclusion that "the context of the '993 patent" would lead to a construction that was not consistent with the plain meaning of the term "optical axis." As found supra, the specification and claims of the '993 patent do not provide a specialized construction of the term "optical axis." Accordingly, the administrative law judge finds that the claim term "optical axis" means "a line through the centers of curvature of the surfaces which make up the optical system which is the common axis of rotation for an axially symmetrical optical system," and that one of ordinary skill in the art as of the date of invention of the '993 patent would not have considered said meaning to require the optical axis to be a physically straight line.

Respondents, in support of their proposed construction, argued that the term is used according to their construction in the '993 patent because each of the "figures in the '993 patent show that the axis of the optical system is a straight line that passes through the center of the optical surfaces that have rotational symmetry." However, as found supra, the use of the term "optical axis" in the description of the invention and in the description of the preferred embodiments do not provide a specialized construction of this term. Further, the "Brief Description Of The Drawings" of the '993 patent includes the following disclaimer:

> The foregoing drawings, which are incorporated in and constitute part of the specification, illustrate the preferred embodiments of the invention, and together with the description, serve to explain the principles of the invention. It is to be

> understood, of course, that both the drawings and the description are explanatory only and are not restrictive of the invention.

(JX-1 at 3:48-54.) Thus, the administrative law judge finds that said figures were not intended to be the only configurations possible to implement the invention of the '993 patent, and thus, the figures do not represent a clear disavowal of claim scope required to limit the meaning of "optical axis." See Epistar, 566 F.3d at 1334 (Fed. Cir. 2009) ("[respondent] must establish the inventors demonstrated an intent to deviate from the ordinary and accustomed meaning of a claim term by including in the specification expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope" (citations omitted)).

3. The claimed phrase "correcting the field curvature of the image contributed by the first and second lens units"

The claim phrase "correcting the field curvature of the image contributed by the first and second lens units" appears in element e) of claim 10, which states "a third lens unit for correcting the field curvature of the image contributed by the first and second lens unit."

Complainant argued that the claimed phrase "correcting the field curvature of the image contributed by the first and second lens units" should be accorded its plain meaning, and that said plain meaning is "to correct the field curvature to achieve a design's intended field curvature specification." (CBr at 30.) Complainant further argued that the language of the claims does not deviate from the plain meaning, and cited to the testimony of its expert, McWilliams to support a finding that said plain meaning does not require eliminating the field curvature. (CBr at 30-31; CFF IV.B.2.h.6.)

Respondents argued that said claim phrase should be construed to mean "introducing field curvature with the third lens unit (distinct from the first and second lens unit) of the same

magnitude, but with opposite sign, as the field curvature caused by the first and second lens units." (RBr at 196.) Respondents further argued that complainant's construction is vague and ambiguous and would render claim 10 indefinite, and that because "the purpose of correcting field curvature is to enable an in-focus image to be projected of a flat surface... the third lens unit must offset the field curvature contributed by the first and second positive lens units with field curvature of the opposite sign... in the same or substantially the same magnitude." (Id. at 197.)

The staff argued that complainant construed said phrase to mean correcting the field curvature of the image caused by the first and second lens units, and that this construction should be adopted "so long as 'correcting' is understood to be broader than 'eliminating.'" (SBr at 20.) The staff further argued that the dispute between the private parties centers on what is meant by the word "correcting" in the claim phrase, i.e. respondents contend that correcting requires the distortion to be eliminated and complainant contends that any level of correction is sufficient; that the ordinary meaning of "correcting" is broader than "eliminating;" that the examples in the '993 patent specification do not eliminate field curvature; and thus, that respondents proposed construction should be rejected and complainant's should be adopted. (Id. at 20-21.)

Based on the parties' proposed constructions for the phrase "correcting the field curvature of the image contributed by the first and second lens units" and the parties arguments regarding said proposed constructions, the administrative law judge finds that the dispute among the private parties with respect to the claim phrase centers on whether "correcting" requires elimination of field curvature or simply any lessening of field curvature. With respect to the

claims of the '993 patent, the phrase "correcting the field curvature of the image contributed by the first and second lens units" appears only in element e) of claim 10, quoted supra, and the administrative law judge finds that the use of said phrase does not provide any indication that said term "correcting" should be given a construction beyond its plain meaning as understood by one of ordinary skill in the art at the time of the invention, viz. "to counteract or neutralize by means of opposite qualities or tendencies." Webster's Third New International Dictionary (1981). The administrative law judge finds that said definition of "correcting" is broader than and does not require eliminating.

With respect to the specification, the Description of the Invention section of the '993 patent includes two descriptions related to "correcting the field curvature" with respect to each of the two aspects of the invention described:

> In addition to reducing the size of the image in the direction orthogonal to the tilt, i.e., in addition to reducing the anamorphosis of the image, the cylindrical power also helps in correcting the field curvature of the image. To achieve this result, the first and second lens units are preferably designed to compensate for astigmatism in a direction perpendicular to the cylindrical power plane.
>
> * * *
>
> The third lens unit for correcting field curvature is preferably a single negative meniscus lens element composed of plastic, e.g., a molded plastic element, which is located either in the vicinity of the aperture stop or in the vicinity of the image. The third lens unit preferably includes at least one aspherical surface.

(JX-1 at 2:47-53; 3:13-18 (emphasis added).) The administrative law judge finds nothing in said descriptions that provide a specific definition for "correcting the field curvature" or any indication regarding the magnitude of correction that is required. He further finds nothing in the

description of the preferred embodiments regarding correction of field curvature or the magnitude of any such correction. In addition, the words "correct," "correcting," and "correction," appear multiple times in the specification in multiple contexts. (See, JX-1 at 1:15-18 ("the authors conclude that the optical system used to form the image of the fingerprint ridges should include prisms for correcting optical distortion") (emphasis added); JX-1 at 1:26-28 ("they state that a system employing cylindrical lenses cannot successfully correct for high levels of horizontal/vertical compression") (emphasis added); JX-1 at 3:18-22 ("correction for the foreshortening introduced by the tilted object as seen from the telecentric entrance pupil") (emphasis added); JX-1 at 3:23-25 ("the above lens systems... do not provide color correction") (emphasis added).) None of said instances of these words, however, provide a specific definition, and there is no indication that these words mean something different in one context versus another. Based on the foregoing, the administrative law judge finds that the specification of the '993 patent does not provide a specialized meaning of the word "correcting." Moreover, the example of Table 4 of the '993 patent is consistent with complainant's construction of the term "correcting the field curvature," i.e. field curvature is corrected but not eliminated. Thus, complainant's expert McWilliams testified regarding the examples disclosed in the '993 patent:

> Q. Professor McWilliams, again we're at CDX-1C.039. This relates to the term correcting the field curvature of the image contributed by the first and second lens units.
>
> Do you have an opinion as to how one of ordinary skill in the art would understand this term?
>
> A. Well, I thought that the terminology as said in the claim taught what to do without further construction, but the Respondents want to say "introducing field curvature with the third lens unit (distinct from the first and second lens units) of the same magnitude, but

with opposite sign, as the field curvature caused by the first and second lens units."

Q. You disagree with that proposed construction, Professor

A. Yes. I read same magnitude but opposite sign as eliminating the field curvature, and correcting is what it says to do, not eliminate.

Q. Is there anything in the specification in the '993 patent that supports your opinion in this respect?

A. Sure. The field curvature calculations from the embodiments show that is corrected but not eliminated.

Q. Turn to CDX-1C.040. What have you illustrated here, Professor?

A. If we show -- if we want to see how that curve is shown, that is, the curve of the image away from the desired image plane, we can measure that as a function of distance going out from the center of, say, the optical axis out to the edge of the image.

That would be represented on the left-hand drawing by how far out we are by going up the Y axis, and the amount of field curvature could be represented by how far – what the curve looks like going -- as a result of showing in the X direction.

For example, at table 4 of the '993 patent, I show the ZEMAX calculation of the field curvature, and you see that this is a curved line as it goes upwards in the Y direction. It is not straight. And it is not exactly zero.

But if we had the same magnitude in opposite sign for the third lens unit correcting the field curvature, it would be exactly a straight line vertically.

Q. How did you create this embodiment 4 diagram on the right side of slide CDX-1C.040?

A. I created the graph shown with embodiment 4 by putting in the optical prescription from table 4 of the '993 patent into the ZEMAX program.

(Tr. at 501-503 (emphasis added).)

Based on the foregoing, the administrative law judge finds that the claim phrase "correcting the field curvature" means to counteract or neutralize by means of opposite qualities or tendencies the field curvature such that the phrase "correcting the field curvature of the image contributed by the first and second lens units" means "introducing field curvature with the third lens unit with the opposite sign of the field curvature caused by the first and second lens units such that the magnitude of field curvature is reduced, but not necessarily eliminated."

Respondents argued that "if the positive field curvature is not corrected with negative field curvature of the same magnitude, or at least substantially the same magnitude, even Complainant's own expert [McWilliams] acknowledges that the uncorrected field curvature will result in a system incapable of projecting a sharp image on flat surface," (RBr at 196-197; RFF 958) referring to the following testimony of McWilliams:

> Q. This is another slide [CDX-1C.018] where there is a fair amount. It might help you to direct just a little bit what you are referring to.
>
> A. Sure. Let's start at the upper left of this one where you can see that a thumb has been placed upon the prism surface. And then some of that light is traveling to the right going through a lens and then passing in this case through an aperture stop region and heading over towards where an image is.
>
> The field we would like to have be focused on the surface, the flat surface of the sensor in this drawing, but the nature of where the image is focused doesn't necessarily have a flat shape to it.
>
> And when a lens is in the system such as you see following the prism, that lens can curve this field for where the image would be focused. So in the example drawn, the image would be focused along the red curve that's shown here up in the upper left, and that red curve does not lie flat upon the image sensor.
>
> We could build an image sensor that matches that curve and then

> your image would be in focus, but, on the other hand, that has a particular manufacturing requirement that's hard to do. So we would rather typically make a flat image instead.
>
> On the left you see if we use a flat image sensor, we find that the fingerprint would be in focus at the center but would be blurred in its image on the outside and not be as useful as we might like.
>
> On the other hand, on the right, there are methods by inserting additional optical elements, a lens is added, in this case, to correct the field curvature, to push that curve shape to be flat like it is on the sensor, and that allows a much better image to be formed and detected.

(Tr. at 461-462 (emphasis added).) The administrative law judge finds that McWilliams testified only that a lens is added to correct field curvature to form a "much better image," and that McWilliams did not testify the field curvature must be eliminated.

B. The '344 Patent

The following are the constructions for the terms of the claim in issue which affect the infringement, domestic industry and/or invalidity determinations.

1. The claim terms "capturing," "captured" and "captures"

The independent method claim 1 and independent system claim 41 recite the claimed terms in issue.

Complainant argued that said claim terms mean "acquiring by the scanner, for processing or storage" (CBr at 127.) Respondents argued that "capture" refers to the scanner's device's acquisition of the image. (RRBr at 57.) The staff believes that "capture" should be construed to mean "acquiring, by the scanner, for processing and storage." (SBr at 25.)

As respondents' expert Jones testified:

> CHIEF JUDGE LUCKERN: Let me ask you this question. A

person of ordinary skill in the art looking at this claim, this patent that is at issue, would he understand that capture has to occur exclusively at the scanner or can capture also involve the computer? And also so what? I mean, is that issue critical from determination whether there is infringement or invalidity? Do you understand what I am trying to ask you? I am asking you a double question, looking at the clock.

* * *

THE WITNESS: For someone with skill in the art at this time, I really believe that capture would immediately -- first of all, without looking at the patent, capture would be something that they would associate as happening on the scanner.

Now, having said that, and in looking through the patent, I believe that that's also supported by the claims here because it talks about capturing at the beginning of the process.

And then starting with elements C, D, E, and F, we're going to do things that are best done by a computer. They may be done by a computer inside the scanner, but they could be done by a separate computer. But step B is where capture happens. So my natural look at the patent from day one was that that was happening on the scanner. I hope that's an answer.

CHIEF JUDGE LUCKERN: Now, I have been going through the briefs that have been filed, the answers to my educational questions, et cetera, et cetera, and I have run across the term capturing and also the term captures and also the term captured.

Is there any substantive difference between those three terms, in other words, is there a substantial difference to a person of ordinary skill in the art with the term capturing as against captures as against captured? Do you understand what I am trying to ask you? If it is a foolish question, say it is foolish, I don't have to answer.

THE WITNESS: No, it is not a foolish question. I believe there is no substantive difference, other than present tense, past tense and that sort of thing. That's obvious.

Scanning is a different thing, but I believe that capturing, capture,

there is no radical difference between those. That's what I believe.

(Tr. at 1525-28.)

Complainant's expert McWillaims agreed with respondent's expert:

> CHIEF JUDGE LUCKERN: Let me ask you this question. When I have studied this patent and looked at the positions of the parties in the filings that they have made, would a person of ordinary skill in the art when they looked at this patent -- I am talking about the pertinent time frame -- understand that capture must occur exclusively at the scanner?
>
> THE WITNESS: For the '344?
>
> CHIEF JUDGE LUCKERN: Yes.
>
> THE WITNESS: Yes, sir.
>
> CHIEF JUDGE LUCKERN: They would?
>
> THE WITNESS: Yes.

(Tr. at 699.) Moreover while the specification of the '344 patent indicates that "control functionality" may be carried out in a scanner, a computer, or a scanner coupled to a computer (JX-2 at 17:36-39), the same passage indicates capture itself is performed by the scanner (JX-2 at 17:42-44 ("any type of sensor, detector, or camera can be used to capture an image as is known in the art") (emphasis added). This is confirmed by other parts of the specification, which allow that "capturing" is the acquisition of the image by the scanner. (JX-2 at 4:61-62, 5:11-13, 7:57-8:19.)

In addition during prosecution of the application that issued as the '344 patent the patentee stated that "capturing data representing a combined image" occurs "in a device located outside the computer." (CFF VI. A. 3 a. 6 (undisputed).)

Based on the foregoing the administrative law judge finds that the proper construction of the terms in issue is "acquiring by the scanner, for processing and storage."

2. The claim term "quality"

Independent claim 1, dependent claim 7, and independent claims 19 and 41 recite the claim term in issue. Complainant argued that "quality" should be construed as "measure of acceptability." (CBr at 139.) Respondents argued that "quality" should be construed as "acceptable, possibly acceptable or unacceptable as defined by a set of predetermined threshold values related to the comparison of size and shape between two fingerprint images." (RBr at 27.) The staff believes that "quality" refers to a "measure of acceptability." (SBr at 27.)

Looking at the intrinsic evidence, the patent uses the word "quality" broadly, either without giving it any specific meaning or without referring to features such as fingerprint information and definition. Thus the abstract reads in part:

> The method also includes comparing the print image to a previously scanned print image, quality classifying the separated images, indicating a quality classification of the print image based on the classifying step, and determining whether the print image is of a good quality.

See also JX-2 at FIG. 1C at 156, 2:40-44, 65-67, 3:1-3, 40-42, 4:37-39, 5:55-60, 6:7-22, 8:1-3, 50-60, 10:5-27, 11:45-67, 12:10-15, 52-58, 13:10-30, 63-67, 14:22-65, 15:8-12, 53-55, 17:17-25 which support a finding that the '344 patent uses the word "quality" broadly.

The specification of the '344 patent does disclose a FIG. 6 flow diagram 600 embodiment in which fingerprint quality "can be" based on area and shape. (See JX-2 at 14:29-30.) However the patentees specifically state:

> Method for Determining Qulity of Captured Fingerprints FIG. 6 is

> a flow diagram 600 depicting a method for determining the quality of individual fingerprints according to an embodiment of the present invention (steps 602-604). The invention is not limited to the description provided herein with respect to flow diagram 600. Rather, it will be apparent to persons skilled in the relevant art(s) after reading the teachings provided herein that other functional flow diagrams are within the scope of the present invention.

(Id. at 13:63-68, 14:1-4 (emphasis added).) As the Federal Circuit explained "although the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments." Phillips, 415 F.3d at 1323.

In addition, the prosecution history alludes to various potential measures of quality, such as legibility and clarity of print. See JX-5 at 4539, 4598. Also the ordinary meaning of "quality" is generally consistent with the meaning given the word by complainant's expert. See e.g., Webster's Third New Int'l Dictionary 1858 (2002 ("2a(1) degree of acceptance GRADE, CALIBER") See also Phillips, 415 F.3d 1314 which states that it is appropriate to look to a general purpose dictionary for the meaning of a word.

Based on the intrinsic evidence and the ordinary meaning of "quality", the administrative law judge finds that a person of ordinary skill in the art would construe, "quality" as "a measure of acceptability."

3. The claim term "good quality"

Independent claim 1, dependent claim 7 and independent claim 41 recite the claim term in issue. Complainant argued that the term "good quality" should be construed as a "measure of acceptability that is adequate." (CBr at 147.) Respondents argued that said term should be construed as "quality sufficient to meet Federal Bureau of Investigation [FBI] certification

standards related to fingerprint image integrity." (RBr at 89.) The staff agrees with complainant that "good quality" is "a measure of acceptability that is adequate." (SBr at 28.)

At the outset, the language of the asserted claims contains no reference to FBI standards. In addition, the administrative law judge has found supra that a person of ordinary skill in the art, based on the intrinsic evidence, would construe the claimed term "quality" as "a measure of acceptability."

Looking at the intrinsic evidence, the term "good quality" is found in the abstract, quoted supra. There is no indication in the abstract that said term should be interpreted as a quality related in any way to the FBI. The term is also found in the specification under the subheading "Brief Summary Of The Invention" in the following paragraph:

> Embodiments of the present invention provide a method including scanning a print image, processing the scanned image, and separating the processed image into individual fingerprint images. The method also includes comparing the print image to a previously scanned print image, quality classifying the separated images, indicating a quality classification of the print image based on the quality classifying step, and determining whether the print image is of a good quality."

(JX-2 at 2:35-44.) There is no indication in said paragraph to the FBI. Thus the specification uses the phrase "good quality" in a general sense, without tying to any particular standard.

Under the subheading "Background Of The Invention" while the FBI is referenced as to what is needed other alternative needs are stated. Thus it reads:

> What is needed is a fingerprint workstation that can capture plain impression fingerprints. What is also needed is an affordable fingerprint workstation with reduced complexity relative to a conventional rolled print workstation, which can provide data and fingerprint image integrity based on Federal Bureau of Investigation (FBI) certification standards. What is further needed

> in a fingerprint impressions as a single image, segment the single image to create four separate images, and automatically determine whether the single image is a left or right hand image.

(JX-2 at 2:1-11.)

Under the subheading "Brief Summary Of The Invention" of the '344 patent there is reference to several embodiments. There is no indication here that each of said several embodiments provides a quality sufficient to meet FBI standards. Moreover "the fact that a patent asserts that an invention achieves several objectives does not require that each of the claims be construed as limited to structures that are capable of achieving all of the objectives." Phillips, 415 F.3d at 1327. In addition the word "good" is an ordinary English word and has been defined as "adapted to the end designed or proposed: satisfactory in performance: free from flaws or defects: USEFU1, SUITABLE, FIT". See Webster's Third New Int'l Dictionary 978 (2002). In addition, it has been found supra that the specification of the '344 patent only uses "good quality" in a general sense.

Based on the foregoing the administrative law judge finds that a persons of ordinary skill in the art would construe the claimed term "good quality" as "a measure of acceptability that is adequate".

4. The claim term "acceptable quality"

Independent claim 19 recites the claim term in issue. Complainant argued that the claim term in issue should be interpreted as "a measure of acceptability that is acceptable." (CBr at 152.) Respondents argued that said claim term should be interpreted as "acceptable as defined by a set of predetermined threshold values related to the comparison of size and shape between two fingerprint images." (RBr at 89.) The staff argued that the term in issue means "a measure

of acceptability that is acceptable." (SBr at 29.)

Claim 19 of the '344 patent calls for a determination of whether the detected fingerprint area and shape are of "acceptable quality" (JX-2 at 19:37) rather than referring to "good quality," which the administrative law judge has interpreted supra, with reference to independent claim 1, as "a measure of acceptability that is inadequate."

The administrative law judge finds very little distinctions between asserted claim 1 and asserted claim 19. As applicants in the prosecution of the '344 patent argued, a prior art reference Takhar does not anticipate said claim 1 "because it fails to teach or suggest at least capturing data representing a combined image, separating the processed combined image into individual fingerprint images, and quality classifying the separated individual fingerprint images" and does not anticipate said claim 19 because it fails to teach or suggest at least detecting a fingerprint area and shape from a combined image of a plurality of fingerprints. (JX-5 at CMT004628-29.)

Looking at the intrinsic evidence, the '344 patent uses the word "acceptable" broadly and without referring to predetermined threshold values. Thus said patent under the subheading "Brief Summary Of The Invention" states:

> Embodiments of the present invention provide a method including scanning a print image, filtering the print image, binarizing the filtered image. The method also includes detecting a fingerprint area based on the binarized image, detecting a fingerprint shape based on the binarized image, and determining whether the fingerprint area and shape are acceptable.

(JX-2 at 2: 44-51 (emphasis added).)

Referring to the many embodiments, as set forth in the '344 patent, embodiment 1C states:

> Indicator board 156 can be coupled to controller 160 via a serial input/output connection. Controller 160 can provide control signals to indicator board 156 for illuminating indicators, such as LEDs (light emitting diodes), to indicate whether the quality of a particular fingerprint for a particular finger is acceptable or unacceptable.

(JX-2 at 10:14-19.) Later the '344 patent referring to real-time feedback quality indicators states:

> In general, feedback can indicate to an operator and/or a user an acceptable scan condition of each individual finger scanned. An acceptable scan condition can include, among others, an indication of acceptable finger placement relative to the platen, and/or an indication that an acceptable image of a print of the finger was captured.
>
> * * *
>
> Each image frame can be processed to determine a quality of the individual fingerprint. After determining the quality of each individual fingerprint, the corresponding indicators 502, 504, 506, and 508 provide feedback to the user to indicate possible corrections or the need to re-position fingers 510, 512, 516, and/or 518 on fingerprint platen 204. This assures that an appropriate level of fingerprint quality can be achieved. In an embodiment, multi-color LEDs can be used for indicators 502, 504, 506, and 508. In that embodiment, a red LED may indicate poor quality, a green LED may indicate acceptable quality, and an amber LED may indicate possibly acceptable quality.

(JX-2 at 12:57-63, 13:10-27.)

The '344 patent under the subheading "Method for Determining Quality of Captured Fingerprints" and referring to the FIG. 6 embodiment states:

> In step 612, each individual fingerprint is compared to a

> corresponding previously scanned fingerprint. In step 614, in one embodiment each fingerprint is quality classified as being either acceptable, possibly acceptable, or unacceptable according to the results of the comparison. In an alternative embodiment, in step 614 each fingerprint is quality classified as being either acceptable or unacceptable. In various embodiments, quality classification can be based on if an area and shape of currently imaged fingerprints are: of equal size and shape, within a previously determined threshold associated with an acceptable quality fingerprint, etc. In these cases, an indicator light can be illuminated green to indicate the currently scanned fingerprint image is an acceptable quality image. If the size and the shape of the currently imaged scanned fingerprint image are below the predetermined acceptable quality threshold, but above a previously determined threshold associated with a unacceptable quality fingerprint, then the indicator light can be illuminated amber to indicate the currently scanned fingerprint image is an possibly acceptable quality image. Finally, if the size and shape of the currently imaged fingerprint is at or below the previously determined threshold associated with an unacceptable quality, then the indicator light can be illuminated red to indicate that the currently scanned fingerprint image is an unacceptable quality image.
>
> It is to be appreciated that all threshold levels are changeable and may be based on customer requirements. For example, one customer's requirements may be to set the acceptable quality threshold at 90% and the unacceptable quality threshold at 10%. Another customer's requirements may not be as stringent, only requiring the acceptable quality threshold to be at 80% and the unacceptable quality threshold to be at 20%.

(JX-2 at 14:22-65 (emphasis added).) Significantly the '344 patent indicates here that customer's requirements may differ as to what is or is not acceptable quality.

Thereafter the '344 patent with respect to FIG. 10 which shows a placement of fingerprints onto a fingerprint card merely makes reference to "[a]cceptable quality" without reference to a set of predetermined threshold values. (JX-2 at 15:7-15.) With respect to FIG. 7 and under the subheading "Slap Imaging Processing" the word "acceptable" is used. (JX-2 at

15:43-60.) Hence "acceptable" can be based on "historical data of a four finger slap image".

The ordinary meaning of "acceptable" is "capable or worthy of being accepted" with "accepted" being defined as "generally approved". See Webster's Third New Int'l Dictionary 11 (2002). Thus in view of the specification the administrative law judge finds that a person of ordinary skill in the art would interpret "acceptable quality" as used in the asserted claims as "capable or worthy of being generally approved and further dependent on a customer's requirement".

Respondents at RFF 510 make reference to a portion of the '344 patent (JX-2 at 14-29-30) as to what "quality classification can be based on". (emphasis added). However the '344 patent also states:

> While specific embodiments of the present invention have been described above, it should be understood that they have been presented by way of example only, and not limitation. It will be understood by those skilled in the art that various changes in form and details may be made without department from the spirit and scope of the invention as defined in the appended claims. Thus, the breadth and scope of te present invention should not be limited by any of the above-described exemplary embodiments, but should be defined only in accordance with the following claims and their equivalents." (JX-2 at 17:44-54.)

5. The claim term "using concentrations of back pixels arranged in oval-like shapes in the combined image to determine individual fingerprint areas and shapes"

Independent claim 1 has the claim term in issue. Complainant argued that the claim term in issue should be construed as "identifying concentrations of black pixels which have oval-like shapes to determine individual fingerprint areas and shapes." (emphasis added) (CBr at 135.) It is argued by respondents that said claim term should be construed as "using concentrations of black pixels arranged in oval-like shapes . . . to determine individual

fingerprint areas and shapes." (RBr at 93.)

The staff is of the view that the claim term in issue should be construed as "identifying concentrations of black pixels, which have oval-like shapes, to determine individual fingerprint areas and shapes." (SRBr at 15.)

Complainant, in support of its proposed construction, argued that the claim language does not require that "oval-like shapes" be "determined" or "calculated; and that the second clause in this limitation requires that the "concentrations of black pixels arranged in oval-like shapes" be used to determine individual fingerprint areas and shapes; and that as with the first clause, nothing in this clause requires a calculation or determination of whether anything is "oval-like." (CBr at 135.) Respondents argued that complainant's construction makes a significant departure from the claim language by demoting oval-like shapes to meaninglessness, and by ostensibly eliminating the requirement of real shape and area determination. (RBr at 93-99.) It is argued by respondents that the claim term in issue should be construed to require determination of actual shapes and areas of fingerprints, i.e. require determination of the actual contours of an image (RBr at 94) and to require determination and use of concentrations of black pixels arranged in oval-like shapes, i.e. that oval-like pixel concentrations be identified and used for shape and area determination. (RBr at 95.) It would appear that respondents are attempting to rewrite the claim term by substituting the language "determine individual fingerprint areas and shapes" of the claim term with the requirement "determination of the actual contours of the fingerprint image."

From the plain language of the claim term in issue the administrative law judge finds that a person of ordinary skill in the art would understand that the claim term only requires using

concentrations of black pixels arranged in oval-like shapes. Hence it is the concentration of black pixels, not the oval-like shapes, that are used. Thus he finds that the language of the claim term does not require that "oval-like pixel concentrations be identified". To the contrary in the following:

> In step 708, a fingerprint area is detected. Usually, the black areas of the image are concentrated around the fingerprints. Thus, the detection step detects the areas concentrated by black pixels. In step 710, fingerprint shapes are detected. The fingerprint shapes can be oval-like shapes. The fingerprint shape detection step detects the areas concentrated by black pixels that are comprised of oval-like shapes.

(JX-2 at 15:43-49 (emphasis added),) the specification of the '344 patent merely states that the detected concentrations of black pixels need only be comprised of oval-like shape and does not require a calculation or determination of whether anything is "oval-like." Thus a person of ordinary skill in the art would find from the specification supra that ovals are not used in the detection process but rather merely recognize that "[t]he fingerprint shapes can be oval-like shapes."

Based on the foregoing, the administrative law judge finds that a person of ordinary skill in the art would interpret the claim term in issue as identifing concentrations of black pixels, which have oval-like shapes, to determine individual fingerprint areas and shapes.

6. The claim terms "comparing each of the separated fingerprint images to a corresponding previously captured acceptable fingerprint image." (claim 1) and "compares the captured fingerprint image to a previously obtained acceptable fingerprint image." (Claim 41)

Complainant argued that the claim terms should be construed as "comparing each of the separated fingerprint images to historical data corresponding to an acceptable fingerprint image." (CBr at 131.) Respondents argued that the claim terms should be construed as

"comparing each of the separated individual fingerprint images to a fingerprint image previously obtained by the scanner whose detected areas and shapes are representative of the type of print scanned (e.g., four finger slap)." (RBr at 98.) In the staff's view, complainant's position comports with the intrinsic evidence. (SBr at 31.)

Complainant, in support of its proposed construction, argued that respondents ignore the '344 patent's express teaching that historical data can be used for comparison purposes. (CBr at 133.) Respondents argued that the claim term in issue requires comparison to an actual image (RBr at 100) and that the term "historical data" in the specification of the '344 patent requires comparison to an actual historical image (RBr at 104) and not an application of an algorithin "trained upon thousands of feature vectors derived from print images." (RBr at 102.)

It is a fact that each of claims 1 and 41 does not actually speak of capturing an image but rather of capturing data. See clause (b) of claim 1 and the reference to "capturing data" and the clause of claim 41 that references "captures data" (emphasis added).

The '344 patent under subheading "Detailed Description Of The Invention" specifically defines "data" as

> The term "data" or "information" throughout the specification can be representative of a biometric, a digital or other image of a biometric (e.g., a bitmap or other file), extracted digital or other information relating to the biometric, etc.

(JX-2 at 4:56-60.) As seen from the foregoing, "data" is defined as being more than the actual image itself and includes information merely "related to" the image as respondents' expert Jones agreed. See Tr. at 1732. Moreover when the specification of the '344 patent describes a process required by asserted claim 1 it describes determining whether fingerprints are "within a

previously determined threshold associated with an acceptable quality fingerprint etc." (JX-2 at 14:29-32.) Thus the specification allows for comparison with a threshold determined from a previously captured fingerprint, not just a comparison with an actual fingerprint itself. This is confirmed by the description of slap image processing, which expressly states that "historical data" is used, which can be (but is not necessarily) an actual fingerprint image. (JX-2 at 15:50-57.)

Based on the foregoing the administrative law judge finds that a person or ordinary skill in the art would interpret that claim term in issue as "comparing each of the separated fingerprint images to historical data corresponding to an acceptable fingerprint image."

Respondents argued that their expert Jones made very clear that while "data" in the abstract can mean information about an image, as pertaining to "historical data", data can only mean image data, i.e. the digital representation of an image. (RRBr at 60.) However the administrative law judge finds that the specification of the '344 patent indicates that the patentees have interpreted "data" as representative of a "biometric, a digital or other image of a biometric, ... extracted digital or other information relating to the biometric, etc." (JX-2 at 4:57-60 (emphasis added).)

7. Alleged Means-Plus-Function Limitation Of Claims 41, 42, 43 and 45 Of The '344 Patent

Respondents contend that various limitations of claims 41, 42, 43, and 45 of the '344 patent should be construed as being in "means-plus-function" format. (RBr at 104-19.) Complainant argued that said limitations would be understood by one of ordinary skill in the art to connote sufficient structure to fall outside the scope of 35 U.S.C. § 112, ¶ 6. (CBr at 154-68.)

The staff is of the view that the evidence of record is not sufficient to rebut the presumption that the limitations are not in "means-plus-function" format. (SBr at 36-38.)

It is a fact that none of said limitations use the word "means." Hence they should not ordinarily be read to be in "means-plus-function" format. DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc., 469 F.3d 1005, 1023 (Fed. Cir. 2006) ("[o]ur cases make clear . . . that the presumption flowing from the absence of the term 'means' is a strong one that is not readily overcome"), cert. denied, 552 U.S. 940 (2007). Moreover terms such as "processor," "separator," "comparator," and "classifier" are clearly not in "means-plus-function" format. Thus these limitations do not use any generic terms such as "means" or "element." Rather, they each use a specific structural term. In Personalized Media Communications, LLC v. International Trade Comm'n, 161 F.3d 696 (Fed. Cir. 1999), the Federal Circuit held that "a digital detector for receiving said transmission and detecting said predetermined signal" was not in "means-plus-function" format, regardless of the fact that a "detector" is defined in terms of its function and does not connote a precise physical structure to one of ordinary skill in the art. Id. at 704-05. In the same way, a "processor," a "separator," a "comparator," and a "classifier" appear to be things (i.e., structures), and thus fall outside the scope of 35 U.S.C. § 112, ¶ 6.

Other terms challenged by respondents, such as "output device," "image quality determining device," "area determining device," and "hand determination device," use the generic term "device." which does not by itself demonstrate that the terms are in "means-plus-function" format. Thus the Federal Circuit has held that a limitation calling for a "detent mechanism" is not written in "means-plus-function" format because the phrase "as the name for structure, has a reasonably well understood meaning in the art." Greenberg v. Ethicon

Endo-Surgery, Inc., 91 F.3d 1580, 1583 (Fed. Cir. 1996). Also there is evidence that said limitations would connote structure to one of ordinary skill in the art. (See CBr at 164-68.)

Based on the foregoing the administrative law judge finds that respondents have not established that certain limitations, that do not use the term "means," should be construed as in "means-plus-function" format and hence fall within the scope of the sixth paragraph of 35 U.S.C. § 112.

C. The '562 Patent

The following are the constructions for the terms of the claims in issue which affect the infringement, domestic industry and/or invalidity determinations.[5]

1. The claim term "capture"

The claim term "capture" is found in independent claims 1 and 30 and dependent claims 5, 7 and 12. Complainant argued that the claim term in issue should be construed as "acquiring, by the scanner, for processing or storage" and further argued that there is no requirement "that the 'scanner,' i.e., the device with the platen and a sensor has to perform any 'capture' steps (which is not req5uired to [be] performed by any asserted claims)." (CBr at 82.) Respondents argued that the claim term should be construed as "the act of the scanner obtaining the scanned fingerprint image prior to forwarding to a computer for further processing and storage." (RBr at 25.) The staff is of the view that "capture" should be construed to mean "acquiring, by the scanner, for processing and storage" (SBr at 39) which is the same as the staff's proposed construction for the claim term "capture" in the '344 patent.

---

[5] The application on which the '562 patent is based is related to the application on which the '344 patent is based. Thus the '562 patent explicitly states inter alia that it incorporates said application of the '344 patent in its entirety. (JX-3 at 1:7-10.)

The administrative law judge has found that a person of ordinary skill in the art would construe the claim term "capture" in the claims of the '344 patent as "acquiring, by the scanner, for processing and storage." See supra. The '562 patent incorporates by reference the entire specification of the '344 patent. (JX-3 at 1:7-10.) Moreover the specification of the '562 patent itself consistently refers to "capture" as an act performed by the scanner before the image is forwarded to the computer. (JX-3 at 2:18-20, 2:51-3:9, 4:62-64, 6:37.) Thus, the intrinsic evidence leads to the conclusion that the term "capture" should be given the same meaning in both the '344 and '562 patents. It is a fact that the '562 patent, states: "[c]ontrol functionality described above, including all or part of the functionality of print capture manager 117, can be carried out by a scanner, such as a ten-print scanner, a computer coupled to the scanner, or distributed between both the scanner and the computer." (JX-3 at 6:53-57.) However, the '344 patent similarly explains that control functionality can be carried out on the scanner, the computer, or both, but that 'capture" occurs on the scanner. (Compare JX-2 at 17:36-44 with JX-3 at 6:53-62.) Yet complainant argued that the claim term "capture" in the '344 patent means "acquiring by the scanner for processing." (CBr at 127.)

In addition the unasserted claims of the '562 patent similarly make it clear that "capture" is something that takes place prior to the image being forwarded to the computer. (See JX-3 at 11:29, 12:11, 12:50, 13:5); see also Phillips, 415 F.3d at 1314 ("Other claims of the patent in question, both asserted and unasserted, can also be valuable sources of enlightenment as to the meaning of a claim term. Because claim terms are normally used consistently throughout the patent, the usage of a term in once claim can often illuminate the meaning of the same term in other claims.") (citation omitted).

Based on the foregoing, the administrative law judge finds that a person of ordinary skill in the art would interpret the claim term "capture" as "acquiring, by the scanner, for processing and storage."

2. The claim term "quality"

Claims 1, 5, 6, 7, 12 and 30 of the '562 patent each refers to image or print quality. Complainant argued that the claim term in issue should be construed as a "measure of acceptability." (CBr at 92.) This is the same way the administrative law judge construed the claim term "quality" in the '344 patent. Respondents argued that said claim term should be construed as "quality based on minutiae data, which are unique and measurable characteristics of a print, including the starting and ending points of ridges and ridge junctions among features". (RBr at 36.) The staff is of the view that complainant's construction should be adopted. (SBr at 42.)

The administrative law judge has interpreted the claim term "quality" in the '344 patent, which specification is incorporated by reference into the specification of the '562 patent, as "a measure of acceptability." The administrative law judge finds with respect to the intrinsic evidence that the '562 patent uses "quality" in its general English sense, without limiting it to any particular type of quality. (See, e.g., JX-3 at abstract.) Also, while six embodiments of the invention refer to "quality" in one form or another (JX-3 at 2:3-45, 2:63-3:7), only one embodiment refers to quality based on minutiae data. (Id. at 2:34-37.) In addition, although all of the claims of the '562 patent refer to image quality or print quality, only one dependent claim requires determining print quality based on minutiae data. (Id. at 12:37-39.) Similarly, the prosecution history of the '562 patent does not limit quality to minutiae data (JX-6 at 6044)

(discussing the number of prints and whether prints have been duplicated or swapped as part of a quality check).

In addition to the foregoing, the Federal Circuit has "made [it] clear that when a patent claim 'does not contain a certain limitation and another does, that limitation cannot be read into the former claim in determining validity or infringement.'" Amgen, Inc. v. Hoechst Marion Roussel, Inc., 314 F.3d 1313, 1326 (Fed. Cir. 2003) (quoting SRI Int'l v. Matsushita Elec. Corp., 775 F.2d 1107, 1122 (Fed. Cir. 1985)). Thus, construing "quality" to mean "quality based on minutiae data, which are unique and measurable characteristics of a print, including the starting and ending points of ridges and ridge junctions among features", as respondents argued would violate the doctrine of claim differentiation and would impermissibily render the additional limitations of dependent claim 11 superfluous. Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 910 (Fed. Cir. 2004) ("[W]here the limitation that is sought to be 'read into' an independent claim already appears in a dependent claim, the doctrine of claim differentiation is at its strongest."). Respondents argued that their proposed construction of "quality" is correct because it is "simply the combination of ... two reference points from the '562 patent's specification." (RBr at 39.) Respondents, however, do nothing more than improperly import a limitation from one of many embodiments described in the specification directly into the claims in contravention of established Federal Circuit law. Prima Tek II, LLC v. Poiypap, S.A.RL, 318 F.3d 1143, 1151 (Fed. Cir. 2003) ("Varied use of a disputed term in the written description demonstrates the breadth of the term rather than providing a limited definition.").

Referring to extrinsic evidence, respondents' expert testified:

Q. Do you recall questioning by the judge yesterday, questioning you

by the judge yesterday about the Staff's count of where minutiae was used in the specification?

A. Yes, I do. I do. I don't recall all the details, but I remember that, yes.

Q. I mean, you have examined the brief summary of the invention section of this patent ['562 patent], have you not?

A. Yes.

Q. And you would agree with me that there are multiple embodiments listed there?

A. Yes.

Q. . . . And would you agree with me that many of the embodiments refer to quality of the image or of the fingerprint?

A. Yes, many embodiments do.

Q. And you would also agree with me only one embodiment refers to use of minutiae?

A. Specifically refers to minutiae, that's correct.

Q. Similarly, in the claims, you would agree with me that I think all of the independent claims refer to quality in one form or another?

A. Yes, that's clear.

Q. But you would also agree with me only . . .

Q. That only independent claim 11 refers to print image quality as being based on minutiae data?

A. As far as having a specific mention of minutiae data, that's correct.

Q. All right. And I believe you also testified that in your view the only specific type of quality mentioned in the '544 patent was quality based on minutiae data; is that correct?

* * *

Q. '562 patent incorporates by reference the '344 patent or the application for the '344 patent?

A. Yes, I would. I would like to add to my answer that I am not as acquainted with everything that is implied by referring in one patent to another application, but clearly it does include it by reference, yes.

Q. You would agree with me the '344 patent at least refers to one other specific measure of quality, which is shape and area, correct?

A. Yes.

(Tr. at 1656-1658 (emphasis added).)

Based on the foregoing, and considering that the '562 patent incorporates by reference the specification of the '344 patent, the administrative law judge finds that a person of ordinary skill in the art would interpret the claim term "quality" as a "measure of acceptability".

3. The claim term "good quality"

Claims 12 and 30 of the '562 patent refer to prints of "good quality." Complainant argued that said claim term should be construed as "measure of acceptability that is adequate." (CBr at 96.) Respondents argued that absent a construction establishing some standard metric, there would be no way for a person reviewing the '562 patent to know the bounds of what "quality" is being measured or when that quality is to be considered "good" and therefore that the claim term "good quality" must at least be tied to sufficiency of a print image to be used for identification purposes. (RRBr at 30.) The staff is of the view that the claim term "good quality" in issue in the '562 patent means the same thing as the meaning "good quality" has for the claims in the '344 patent which the administrative law judge has found supra should be construed as a "measure of acceptability that is adequate." On this point the specification of the

'562 patent incorporates the specification of the '344 patent. Also it specifically equates the word "good" to "acceptable" and further indicates that what is acceptable can depend on a particular customer's requirements hence indicating a variation in what is "good" or "acceptable." For example the specification of the '562 patent, referring only to FIG. 3C which shows "a routine of indicating print image quality according to an embodiment of the present invention" (JX-3 at 3:45-46) states:

> FIG. 3C further describes print quality indication step 336, starting immediately with step 374. In step 374, each individual print image is classified based on a predetermined quality threshold. It is to be appreciated that quality threshold levels are changeable and may be based on customer requirements. For example, one customer's requirements may be to set the acceptable quality threshold at 90% and the unacceptable quality threshold at 10%. Another customer's requirements may not be as stringent, only requiring the acceptable quality threshold to be at 80% and the unacceptable quality threshold to be at 20%. In an embodiment of the present invention, the quality classification includes acceptable (i.e., good) or not acceptable. In step 376, the quality classification of each individual print image is indicated in real-time to the operator. The real-time quality indication is also described earlier herein with reference to FIGS. 4A and 4B. In step 378, the routine continues with step 338, described earlier herein.

(JX-3 at 9: 61-67, 10:1-11 (emphasis added).)

Based on the foregoing, the administrative law judge finds that a person of ordinary skill in the art would interpret the claim term "good quality" as a "measure of acceptability that is adequate."

4. The claim term "an expected number of prints"

Claims 1, 5, 7, 12 and 30 of the '562 patent call for determining whether an image is ready for capture based on "an expected number of prints." Complainant argued that said claim

term should be construed as "an expected number of prints, where a print is any type of print including, but not limited to, a print of all or part of one or more fingers palms, toes, foot, hand, etc." (CBr at 99.) Respondents' construction for said claim term is "the number of fingers expected based on the type of the scanned image." (RBr at 42.) Thus respondents appear to be replacing "prints" in said claim term with the word "fingers" and to limit the claim term to one print per finger. (See RBr at 43.)

The staff argued that said claim term should be construed to mean "the number of prints expected based on the type of scanned image." (SBr at 45.)

The specification of the '562 patent under the subheading "Terminology" states:

> The term "print" can be any type of print including, but not limited to, a print of all or part of one or more fingers, palms, toes, foot, hand, etc. A print can also be a rolled print, a flat print, or a slap print.

(JX-3 at 4:26-29.) Thus the patentees expressly define prints as including but not limited to fingers. Respondents rely on the description in the '562 patent of one embodiment. (JX-3 at 8:25-34.) However the specification as to that embodiment states that "[i]n an embodiment of the present invention, print capture manager 117 expects four prints for a four finger slap image or expects two prints for an image of the thumbs." (Id. (emphasis added).) Thus, referring back to the prior definition of "print," the specification indicates that the expected number of prints changes based on the type of image.

Complainant's proposal appears to rely only on the definition of "print" in the specification. The claims in issue however require scanning a biometric object to obtain a scanned image.

Based on the foregoing, the administrative law judge finds that person of ordinary skill in the art would construe the claim term in issue as "the number of prints expected based on the type of scanned image."

IX. Infringement

A. '993 Patent

1. Accused Products

Complainant argued that the accused products with respect to the '993 patent are respondent Suprema's RealScan-10, RealScan-10F, RealScan-D, RealScan-DF and RealScan-F devices {

}

In particular, complainant accuses the RealScan-10/10F products of infringing asserted claims 10, 12, and 15; the RealScan-D/DF products of infringing asserted claims 10, 11, 12 and 17, and the RealScan-F product of infringing asserted claims 10, 12, 17, and 18. (SBr at 50; CBr at 33-59.) Thus, the accused products with respect to the '993 patent are RealScan-10/10F, RealScan-D/DF, and RealScan-F ('993 accused products).

2. Independent claim 10

a. The claimed phrase "An optical system having an optical axis, said system forming an image of an object and comprising..."

Complainant, with respect to said accused products, argued that under either parties' construction of "optical system," the '993 accused products practice the preamble, { }

{

}[6]

Regarding the claimed phrase "optical system," the administrative law judge has found, supra, that said phrase means "a collection of optical elements in a specified configuration to act on light" and does not preclude the use of non-lens elements, distortion correcting prisms, holographic optical elements, or off-axis optics; and has further found that the preamble is limiting on the claim. It is undisputed that CX-1C is a diagram of the RealScan-10 optical system (CFF IV.C.2.19 (undisputed)); {

[7]

} and that CX-6C is a drawing of the optical system of the RealScan-F (CFF IV.C.C.2.23 (undisputed)). { }

---

[6] The staff provided no argument regarding the preamble with respect to the RealScan-F accused product.

[7] {

}

{

}

Regarding the preamble's requirement for an optical axis, the administrative law judge has found, supra, that the claimed phrase "optical axis" means "a line through the centers of curvature of the surfaces which make up the optical system which is the common axis of rotation for an axially symmetrical optical system" and one of ordinary skill in the art as of the date of invention of the '993 patent would not have considered said meaning to require the optical axis to be a physically straight line. {

}

Based on the foregoing, the administrative law judge finds that each of the '993 accused products practices the preamble of asserted claim 10.

b. The claimed phrase "a) a prism having a first surface for contacting the object and a second surface, said first surface being oriented with respect to the optical axis at an angle greater than the angle of total internal reflection of the surface..."

Complainant argued that there is no dispute that each of the '993 accused products meet element a) of asserted claim 10; {

}

{

}

Respondents provided no arguments in the post hearing briefs regarding this claim element. (See, generally, RBr at 199-203; RRBr at 167-175.)

The staff provided no arguments in the post-hearing briefs regarding this specific issue. (See, generally, SBr at 50-53; SRBr at 25-27.)

It is undisputed that the '993 accused products practice this claim element. (CFF IV.C.2.b.54 (undisputed).) Further, respondents have admitted that their expert witness Sasian does not disclose a non-infringement position for element a) of asserted claim 10. (Tr. at 1349-50; CFF IV.C.2.4 (undisputed).) Based on the foregoing, the administrative law judge finds that each of the accused products practices element a) of asserted claim 10.

c. The claimed phrase "b) an aperture stop..."

{

}

Respondents provided no arguments in the post hearing briefs regarding this claim element. (See, generally, RBr at 199-203; RRBr at 167-175.)

The staff provided no arguments in the post-hearing briefs regarding this specific issue. (See, generally, SBr at 50-53; SRBr at 25-27.)

It is undisputed that the '993 accused products practice this claim element. (CFF IV.C.2.c.12 (undisputed).) Further, respondents have admitted that their expert witness Sasian does not disclose a non-infringement position for element b) of asserted claim 10. (Tr. at 1350; CFF IV.C.2.5 (undisputed).) Based on the foregoing, the administrative law judge finds that each of the accused products practices element b) of asserted claim 10.

d. The claimed phrase "c) a first lens unit having a positive power between the aperture stop and the prism for forming a telecentric entrance pupil..."

{

[8]

}

Respondents argued that the '993 patent disclaims the use of lens systems employing non-lens elements, and thus the '993 accused products fail to meet element c) of asserted claim 10. (RBr at 200.)

The staff argued that the claims do not preclude the use of non-lens elements and off-axis optics, and has not objected to complainant's findings regarding this claim element. (SBr at 51; CFF IV.C.2.d.2, CFF IV.C.2.d.4, CFF IV.C.2.d.5 (all undisputed by staff).)

---

[8] JML Optical is a company that tests, manufactures, and sells optical components. (CFF IV.C.2.17 (undisputed).)

The administrative law judge has found, supra, that the '993 patent does not disclaim the use of non-lens elements. {

} Moreover, respondents admit their expert witness Sasian did not offer a non-infringement argument based on telecentricity. (CFF IV.C.2.d.1 (undisputed).) Respondents' only non-infringement arguments are based on a claim construction that the administrative law judge has rejected.

Based on the foregoing, the administrative law judge finds that each of the '993 accused products practices element c) of asserted claim 10.

e. The claimed phrase "d) a second lens unit having a positive power for forming a real image of the object, said second lens unit being on the image side of the first lens unit; and..."

{

}

{ [9] }

Respondents argued that the '993 patent disclaims the use of lens systems employing non-lens elements and off-axis optics, and thus the '993 accused products fail to meet element d) of asserted claim 10. (RBr at 200-201.)

The staff argued that the claims do not preclude the use of non-lens elements and off-axis optics, and has not objected to complainant's findings regarding this claim element. (SBr at 51; CFF IV.C.2.e.1, CFF IV.C.2.e.2, CFF IV.C.2.e.3 (all undisputed by staff).)

{

[10]

} Moreover, respondents' only non-infringement arguments are based on a claim construction that the administrative law judge has rejected.

---

[9] Complainant's brief refers to a "first lens unit in each device" while citing to proposed findings that refer to the second lens unit. (CBr at 46.) The administrative law judge assumes that the references to "second lens unit" are correct.

[10] It is undisputed that CX-9 is a JML Optical summary of measurements of the lens units in the RealScan-D, RealScan-F, and RealScan-10. (CFF IV.C.2.e.15 (undisputed).)

Based on the foregoing, the administrative law judge finds that each of the '993 accused products practices element d) of asserted claim 10.

f. The claimed phrase "e) a third lens unit for correcting the field curvature of the image contributed by the first and second lens units."

{

}

{

}

Thus, the staff argued that complainant has not shown that the RealScan-F product practices element e) of asserted claim 10. (SBr at 52.)

The administrative law judge has found, supra, that the claimed phrase "correcting the field curvature" means to counteract or neutralize by means of opposite qualities or tendencies the field curvature such that the phrase "correcting the field curvature of the image contributed by the first and second lens units" means "introducing field curvature with the third lens unit with the opposite sign of the field curvature caused by the first and second lens units such that the magnitude of field curvature is reduced, but not necessarily eliminated."

{

} Based on the foregoing, the

administrative law judge finds that while the RealScan-10/10F accused products practice element e) of asserted claim 10, complainant has not shown that the RealScan-D/DF products practice element e) of asserted claim 10.

{

}

{

} Based on the foregoing, the administrative law judge finds that complainant has not shown, by a preponderance of the evidence, that the RealScan-F accused product practices element e) of claim 10.

g. Conclusion regarding claim 10

Based on the foregoing, the administrative law judge finds that complainant has shown, by a preponderance of the evidence, that the RealScan-10/10F accused products infringe asserted claim 10 of the '993 patent, but that complainant has not shown, by a preponderance of the evidence, that the RealScan-D/DF and RealScan-F accused products infringe claim 10 of the '993 patent.

3. Dependent claim 11

Dependent claim 11 reads "The optical system of claim 10 wherein the first lens unit comprises at least one aspherical surface." Complainant has alleged infringement of claim 11 against only the RealScan-D/DF accused products. (See, supra.) As the administrative law

judge has found in A.2.g, supra, that there is no infringement of asserted claim 10, from which claim 11 depends, he finds that complainant has not shown that claim 11 is infringed by said RealScan-D/DF accused products.

4. Dependent claim 12

Dependent claim 12 reads "The optical system of claim 10 wherein the first lens unit consists of a single lens element." Complainant alleged that each of the '993 accused products infringes claim 12 of the '993 patent. (See, supra.) As an initial matter, the administrative law judge has found in A.2.g, supra, that the RealScan-D/DF and RealScan-F accused products do not infringe asserted claim 10, from which claim 12 depends. Therefore, complainant has not shown that the RealScan-D/DF and RealScan-F accused products infringe claim 12 of the '993 patent.

{

} Based on the foregoing, the administrative law judge finds that complainant has, by a preponderance of the evidence, shown that the RealScan-10/10F products infringe asserted claim 12 of the '993 patent.

5. Dependent claim 15

Dependent claim 15 reads "The optical system of claim 10 wherein the third lens unit has a negative power." Complainant has alleged infringement of claim 15 against only the

RealScan-10/10F accused products. (See, supra.) {

}

Based on the foregoing, the administrative law judge finds that complainant has shown, by a preponderance of the evidence, that the RealScan-10/10F accused products infringe asserted claim 15 of the '993 patent.

6. Dependent claim 17

Dependent claim 17 reads "The optical system of claim 10 wherein the third lens unit comprises an aspherical surface."

Complainant has alleged infringement of claim 17 against only the RealScan-D/DF and RealScan-F accused products. (See, supra.) As the administrative law judge has found in A.2.g, supra, that there is no infringement of asserted claim 10 by any of said products, from which claim 17 depends, he finds that complainant has not shown that claim 17 is infringed by said RealScan-D/DF and RealScan-F accused products.

7. Dependent claim 18

Dependent claim 18 reads "The optical system of claim 10 wherein the third lens unit consists of a single lens element." Complainant has alleged infringement of claim 18 against only the RealScan-F accused product. (See, supra.) As the administrative law judge has found in A.2.g, supra, that said product does not infringe asserted claim 10, from which claim 18 depends, he finds that complainant has not shown that claim 18 is infringed by said RealScan-F

accused product.

B. '562 Patent

1. Accused Products

Complainant asserted independent claim 1, claims 5, 6, 7, 12 each of which are depdendent on claim 1 and independent claim 30 of the '562 patent against respondents. Specifically, the accused products with respect to the '562 patent are Suprema's RealScan-10/10F, RealScan-D/DF, RealScan-F, RealScan-G2 and RealScan-G10 scanners, as well as Suprema's RealScan Basic and Extended SDK software, and Mentalix's Fed Submit software. (CBr at 5-6.)[11] All of the accused hardware use Suprema's SDK software,[12] and thus the parties have presented arguments on said software rather than the individual accused products. Hence, any analysis of said software applies to all of the accused products.

2. Independent claim 1

a. The claimed phrase " (f) determining whether the scanned image is ready for capture based on an expected number of prints detected in step (e) and the quality of the print images determined in step (d)."

{

}

[11] Complainant also accused third party { } software of infringement , in conjunction with Suprema's RealScan Basic SDK and Suprema's RealScan-D products.

[12] See Section III supra referring to Order No. 29, which referenced a Joint Stipulation Regarding Technology.

{

}

The administrative law judge has found, supra, that the claimed phrase "capture" means "acquiring, by the scanner, for processing and storage." {

}

{

}

{

} Thus, the administrative law judge finds that element f) of asserted claim 1 of the '562 patent is not practiced by any of the accused products.

Complainant argued that "a computer can make the final decision as to whether to keep the scanned image in the capture process..." (CBr at 114.) The administrative law judge finds that it is the capture by the scanner that is at issue. What a computer may do after said capture he finds irrelevant.

Complainant further argued that the asserted claims of the '562 patent do not require that an image be captured, and thus claim 1, for example, is satisfied when the image is ready for capture, not when it is captured. However, capturing an image and then performing the two quality checks required by this claimed element does not satisfy the claimed element, as the image has already been captured.

Complainant refers to the doctrine of equivalents. (See, inter alia, CBr at 89, 103.) Yet, as pointed out by the staff (SRBr at 35), complainant's expert has provided no testimony that this claim element is practiced under the doctrine of equivalents. (See, inter alia, Tr. at 648-52.)

Thus, the administrative law judge finds that complainant has provided insufficient basis for the administrative law judge to consider practice of this claim element under the doctrine of equivalents. Amgen, Inc. v. F. Hoffman-La Roche Ltd., 580 F.3d 1340, 1379 (Fed. Cir. 2009); Lear Siegler, Inc. v. Sealy Mattress Co., 873 F.2d 1422, 1425 (Fed. Cir. 1989).

Based on the foregoing, the administrative law judge finds that complainant has not shown, by a preponderance of the evidence, that any of the accused products infringe claim 1 of the '562 patent.

3. Dependent claims 5, 6, 7, 12

The administrative law judge has found in B.2, supra, that complainant has not shown that the accused products infringe independent claim 1 of the '562 patent. Each of asserted claims 5, 6, 7, and 12 depend from asserted claim 1. Therefore, complainant has not shown, by a preponderance of the evidence, that any of the asserted claims 5, 6, 7, or 12 are infringed by the accused products.

4. Independent claim 30

a. The claimed phrase, "(f) determining whether the scanned image is ready for capture based on an expected number of prints detected in step (e) and the quality of the print images determined in step (d), wherein the scanned image is ready for capture when the expected number of prints is present within the scanned image and the expected prints are all of good quality within a predetermined capture delay time period."

The administrative law judge found in B.2, supra, that element f) of asserted claim 1 is not practiced by any of the accused products. The administrative law judge finds that the analysis with respect to element f) of asserted claim 30 in issue is substantively the same as for element f) of asserted claim 1. Thus, he finds that complainant has not shown, by a preponderance of the evidence, that the accused products infringe asserted claim 30 of the '562

patent.

C. '344 Patent

1. Accused Products

Complainant asserted claims 1, 7, 19, 41, 42, 43, and 45 of the '344 patent against respondents. Specifically, the accused products with respect to the '344 patent are Suprema's RealScan-10/10F, RealScan-D/DF, RealScan-F, RealScan-G2 and RealScan-G10 scanners, as well as Suprema's RealScan Basic and Extended SDK software, and Mentalix's Fed Submit software. (CBr at 5-6.) As found with respect to the accused products for the '562 patent, supra, all of the accused hardware use either Suprema's SDK software or Mentalix's Fed Submit software, and thus the parties have presented arguments on said software rather than the individual accused products and hence any analysis of any of said software applies to all of the accused products.

2. Independent Claim 1

The claimed phrase "(e) comparing each of the separated individual fingerprint images to a corresponding previously captured acceptable fingerprint image..."

{

}

{

}

The administrative law judge has found that this claim element is construed as "comparing each of the separated fingerprint images to historical data corresponding to an acceptable fingerprint image." {

}

{

} Therefore, the administrative law judge finds that complainant has not shown, by a preponderance of the evidence, that this claim element is infringed by the accused

products.[13]

Based on the foregoing, the administrative law judge finds that complainant has not shown, by a preponderance of the evidence, that any of the accused products practice asserted claim 1 of the '344 patent.

3. Dependent claim 7

The administrative law judge has found, supra, that complainant has not shown by a preponderance of the evidence that asserted independent claim 1 is practiced by the accused products. Thus, the administrative law judge finds that complainant has not shown that claim 7, which depends from claim 1, is infringed by the accused products.

4. Independent Claim 19

Complainant has accused Mentalix's Fed Submit software, used in conjunction with RealScan devices, of infringing claim 19 of the '344 patent. Thus, the following analysis references the Fed Submit software.

a. The claimed phrase "(a) scanning one or more fingers..."

{

}

Respondents provided no substantive non-infringement argument with respect to this claim element, aside from alleging weaknesses in complainant's arguments. (See, inter alia,

[13] Complainant did not present any argument that this claim element is infringed by the accused products under the doctrine of equivalents.

ROCFF VI.C.1.b.1, ROCFF VI.C.1.b.2; RBr at 149-153.)

The staff argued that complainant has shown by a preponderance of the evidence that the Mentalix systems infringe claim 19 of the of the '344 patent. (SBr at 57-58.)

{

} Based on the foregoing, the administrative law judge finds that complainant has shown, by a preponderance of the evidence, that the accused products practice this claim element.

b. The claimed phrase "(b) capturing data representing a corresponding fingerprint image..."

{

}

Respondents provided no substantive non-infringement argument with respect to this claim element. (See, inter alia, RBr at 149-153.)

The staff argued that complainant has shown by a preponderance of the evidence that the Mentalix systems infringe claim 19 of the of the '344 patent. (SBr at 57-58.)

{

}

is not rebutted by respondents. Based on the foregoing, the administrative law judge finds that complainant has shown, by a preponderance of the evidence, that the accused products practice this claim element.

c. The claimed phrase "(c) filtering the fingerprint image..."

Complainant argued that the Fed Submit software satisfies this claim limitation through various function calls. (CBr at 195.)

Respondents provided no substantive non-infringement argument with respect to this claim element, aside from alleging weaknesses in complainant's arguments. (See, inter alia, ROCFF VI.C.1.d.1, ROCFF VI.C.1.d.2 ROCFF VI.C.1.d.3, ROCFF VI.C.1.d.4, ROCFF VI.C.1.d.5; RBr at 149-153.)

The staff argued that complainant has shown by a preponderance of the evidence that the Mentalix systems infringe claim 19 of the of the '344 patent. (SBr at 57-58.)

{

} Based on the foregoing, the administrative law judge finds that complainant has shown, by a preponderance of the evidence, that the accused products practice this claim element.

d. The claimed phrase "(d) binarizing the filtered fingerprint image..."

Complainant argued that the Fed Submit software satisfies this claim limitation through various function calls. (CBr at 195-96.)

Respondents provided no substantive non-infringement argument with respect to this claim element, aside from alleging weaknesses in complainant's arguments. (See, inter alia, ROCFF VI.C.1.e.1, ROCFF VI.C.1.e.2; RBr at 149-153.)

The staff argued that complainant has shown by a preponderance of the evidence that the Mentalix systems infringe claim 19 of the of the '344 patent. (SBr at 57-58.)

{

} Based on the foregoing, the administrative law judge finds that complainant has shown, by a preponderance of the evidence, that the accused products practice this claim element.

e. The claimed phrase "(e) detecting a fingerprint area based on a concentration of black pixels in the binarized fingerprint image..."

{

}

{

}

The parties had agreed that this claimed phrase need not be construed by the administrative law judge. (Respondents' Response to Complainant's Motion to Narrow Certain Claim Construction Issues for Trial at 4; CBr at 126; RBr at 93-96 (relating this claimed phrase to element c of asserted claim 1); SRBr at 14-15, fn. 2 (pointing out that respondents' argument that their construction for element c) of asserted claim 1 applies to this claim element is made for the first time in respondents' brief); see also, generally, CRBr at 85-100; SBr at 25-35.) The administrative law judge finds that the plain language is sufficiently clear that a separate construction is unnecessary.

{

}

{ [14] }

[14] Respondents represented in RRCFF VI.C.2 that their expert Jones provided a non-infringement opinion on element e) of claim 19, but the administrative law judge has reviewed the testimony on which they rely and has not found any clear reference to element e) of claim 19. Respondents' expert does testify that the accused products do not determine "individual fingerprint areas and shapes," but he then relates that specific testimony to only element f) of claim 19. (Tr. at 1566.)

{

} Fingerprints are generally oval shaped. (CFF VI.B.1.h.2 (undisputed in relevant part).) Based on the foregoing, the administrative law judge finds that the accused products practice this claim element.

{

}

f. The claimed phrase "(f) detecting a fingerprint shape based on an arrangement of the concentrated black pixels in an oval-like shape in the binarized fingerprint image; and..."

Complainant argued that this element is practiced by the Fed Submit software for the same reasons given for element e) of asserted claim 19, supra. (CBr at 197.)

{

}

Based on the foregoing, the administrative law judge finds that complainant has shown, by a preponderance of the evidence, that element f) of asserted claim 19 is practiced by the accused

g. The claimed phrase "(g) determining whether the detected fingerprint area and shape are of an acceptable quality."

{

}

The staff argued that it is of the view that complainant has shown by a preponderance of the evidence that the use of the accused Mentalix systems infringes claim 19 of the '344 patent.

The administrative law judge has found, supra, that "acceptable quality" as used in the asserted claims is construed as "capable or worthy of being generally approved and further dependent on a customer's requirement." {

} Based on the foregoing, the administrative law judge finds that complainant has shown, by a preponderance of the evidence, that element g) is practiced by the accused products.

h. Conclusion

Based on the foregoing, the administrative law judge finds that complainant has shown, by a preponderance of the evidence, that accused RealScan-10 and RealScan-D, which also includes the RealScan-10F and RealScan-DF, when used with the Fed Submit software, infringe asserted claim 19 of the '344 patent.[15]

5. Independent claim 41

a. The claimed phrase "a comparator that compares the captured fingerprint image to a previously obtained acceptable fingerprint image..."

The administrative law judge finds that said claimed phrase is substantially similar to element e) of asserted independent claim 1, and the administrative law judge has found, supra, that complainant has not shown that said element e) of asserted claim 1 is practiced by the accused products. Thus, the administrative law judge finds that complainant has not shown that the claimed phrase "a comparator that compares the captured fingerprint image to a previously obtained acceptable fingerprint image..." from asserted claim 41 is practiced by the accused products.

---

[15] It is undisputed that each of the RealScan-10, RealScan-D, RealScan-F, RealScan-G2, and RealScan-G10 systems have been imported. (See Order Nos. 11, 18 (stipulations regarding importation).) It is further undisputed that the Fed Submit software supports the RealScan-10 and RealScan-D devices. (CFF VII.B.2.a.44 (undisputed).) Complainant has not shown, however, that the RealScan-G2 and RealScan-G10 have been used with the Fed Submit software. (CBr at 210 (alleging the RealScan-10 and RealScan-D have been incorporated into Mentalix' Fed Submit software but specifically not alleging the same with respect to the RealScan-G2 and RealScan-G10); JX-44 at 6 (testimony that the RealScan-G2 and RealScan-G10 are not ready for testing/integrating); JX-42 at 36-37 (testimony that the systems were not demonstrated in the US).) Based on the foregoing, the administrative law judge finds that the only accused products which complainant has shown infringe asserted claim 19 of the '344 patent, when used with the Fed Submit software, are the RealScan-10 and RealScan-D, which also includes the RealScan-10F and RealScan-DF, as those products have been found to be substantially similar.

Based on the foregoing, the administrative law judge finds that complainant has not shown that asserted claim 41 is practiced by any of the accused products.

6. Dependent claims 42, 43, and 45

The administrative law judge has found, supra, that complainant has not shown that asserted independent claim 41 of the '344 patent is infringed by the accused products. As each of claims 42, 43, and 45 depend from said claim 41, the administrative law judge finds that complainant has not shown, by a preponderance of the evidence, that asserted claims 42, 43, and 45 are practiced by the accused products.

D. Infringement By Third Parties, Contributory Infringement, and Inducement to Infringe

Complainant has accused various third parties of infringement of certain asserted claims of the '562 and/or '344 asserted patents. (CBr at 209-214.) Said accusations depend on software written by said third parties that use the Suprema SDK, that complainant represents is substantially the same as the functions accused of infringement against respondents. (Id.) The administrative law judge has found, supra, that complainant has not shown infringement of the '562 patent, and has further not shown infringement of the asserted claims of the '344 patent, with the exception of asserted claim 19. As complainant has made no allegations of infringement by third parties of claim 19 of the '344 patent, each of complainant's accusations against third parties fail for the same analysis, supra, as for direct infringement by respondents of the various claims in issue.

As complainant has not shown infringement by any third parties, the administrative law judge finds that complainant has also shown neither contributory infringement nor inducement to infringe by respondents.

E. Other Arguments

Respondents argued that the Suprema SDKs cannot directly infringe because each of the asserted claims requires "the use of executable software ... running on a separate computer in order to operate the scanners sold by Suprema..."; that the RealScan SDKs comprise a collection of software routines and utilities used to help third party programmers write an application; that the SDKs are incapable of performing the steps of any asserted claims and therefore cannot form the basis of a direct infringement claim. (RBr at 59.) Respondents further argued that the sample code provided with its scanners is distributed as source code and is not executable, and therefore cannot be used to infringe. (RBr at 59-60.) {

}

Complainant argued that its' expert testified as to how the sample code and the demonstration program infringes the '562 patent; that its expert pointed to file names and line numbers in his analysis; and that in fact that testimony was unrebutted by respondents. (Tr. at 74-75.) Specifically, complainant argued that Suprema directly infringed the asserted claims of the'562 patent by using the demonstration program; that Mentalix directly infringed the asserted '562 patent by using its Fed Submit software in conjunction with the RealScan products, including the RealScan-10, RealScan-D, RealScan-G10 and RealScan-G2. (CRBr at 77-79.) More specifically, it is undisputed that the Fed Submit software supports the RealScan-10 and

RealScan-D accused devices, and that respondent Mentalix has sold said scanners as a system with its Fed Submit software. (CFF VII.B.2.a.8 (undisputed in relevant part); RRCFF VII.B.2.a.8 ("Mentalix purchased RealScan-10 scanners from suprema, and sold them as a system with its FedSubmit software."); CFF VII.B.2.a.44 (undisputed).)

The staff argued that complainant has shown that respondents infringe the asserted method and system claims of the '344 patent, as Suprema and Mentalix have demonstrated or tested the systems in the US. (SRBr at 36-38.)

The administrative law judge has found, supra, that the only asserted method claim that is infringed is claim 19 of the '344 patent. Complainant alleged infringement of claim 19 of the '344 patent against only certain RealScan products running the Fed Submit software, i.e. RealScan-10, RealScan-D, RealScan-G2, and RealScan-G10. Thus, the administrative law judge finds respondents' arguments with respect to the asserted '562 patent and with respect to asserted claims 1, 7, 41, 42, 43, and 45 of the asserted '344 patent, supra, moot.

X. Invalidity

A. Prior Art

Respondents argued that asserted independent claim 10 and asserted dependent claims 15 and 18 of the '993 patent would have been obvious considering U.S. Patent No. 3,619,060 (the '060 patent) (RX-31) in combination with U.S. Patent No. 2,445,594 (the '594 patent) (RX-25). (RBr at 211-218.) Respondents further argued that independent claim 10 and asserted dependent claims 11, 12, 15, 17 and 18 of the '993 patent would have been obvious considering the '060 patent in combination with U.S. Patent No. 5,615,051 (the '051 patent)(RX-7). (RBr at 218-224.) Regarding the '344 patent, respondents argued that asserted claims 1, 7, 19, 41, 42,

43, and 45 are rendered obvious by U.S. Patent No. 5,073,949 (the '949 patent) (RX-12) alone or in combination with U.S. Patent No. 5,963,656 (the '656 patent) (RX-4). (RBr at 164-181.) Regarding the '562 patent, respondents argued that asserted independent claim 1 is anticipated by U.S. Patent Application Publication No. US 2007/0014440 (the '440 application) (RX-41); and that dependent claims 5, 6, 7, and 12 and independent claim 30 are rendered obvious by the '440 application. (RBr at 65-74.)

Complainant argued that respondents have not shown by clear and convincing evidence that any of the asserted claims of the '993, '344, and '562 patents are anticipated or obvious in view of any of the prior art asserted. (CBr at 59-76, 121-125, 197-203.) Complainant also argued that secondary indicia of non-obviousness based on copying and willful infringement show that the asserted claims are not obvious. (CBr at 203-206.)

The staff argued that respondents have not established by clear and convincing evidence that any of the asserted claims are invalid as anticipated or obvious. (SBr at 69-86.)

An issued patent is presumed valid, see 35 U.S.C. § 282, and a party challenging a patent's validity must overcome this presumption by clear and convincing evidence. See Pfizer, Inc. v. Apotex, Inc., 480 F.3d 1348, 1360 (Fed. Cir. 2007). Respondents have the burden to overcome the presumption that the asserted claims are valid. Tech. Licensing Corp. v. Videotek, Inc., 545 F.3d 1316 (2008). The burden of persuasion never shifts to complainant. Id. Rather, the risk of "decisional uncertainty" remains on the party or parties asserting invalidity. Id. Thus, it is respondents' burden to prove by clear and convincing evidence that any of the alleged prior art references anticipate or render obvious any asserted claims. See PharmaStem Therapeutics, Inc. v. ViaCell, Inc., 491 F.3d 1342, 1360 (Fed. Cir. 2007) (stating, "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."). Failure to do so means that respondents lose on this point. Tech. Licensing, 545 F.3d at 1327.

1. Asserted Prior Art

The '060 patent is titled "Identification Device" and was issued on November 9, 1971 (JX-31.)

The '594 patent is titled "Telecentric Projection Lens" and was issued on July 20, 1948.

The '051 patent is titled "Bright Triplet" and was issued on March 25, 1997 from an application filed on October 7, 1994 and claiming priority to a Japanese patent application filed on October 8, 1993.

The '949 patent is titled "Personal Verification Apparatus" and was issued on December 17, 1991.

The '656 patent is titled "System and Method For Determining The Quality of Fingerprint Images" and was issued on October 5, 1999.

The '440 application (Lo (U.S. Patent Application Publication No. US 2007/0014440)) is titled "Automatic Fingerprint Identification System And Method," was published on January 18, 2007 and filed on December 18, 2002.

2. Anticipation

A patent claim is invalid as anticipated if it "was known or used by others in this country, or patented or described in a printed publication" before the claimed invention, or it was "patented or described in a printed publication... more than one year prior" to the filing

date. 35 U.S.C. §§ 102(a) and (b). Additionally, a claim is anticipated if "the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent." 35 U.S.C. § 102(e). For anticipation, "all of the elements and limitations of the claim must be shown in a single prior art reference, arranged as in the claim." Karsten Mfg. Corp. v. Cleveland Golf Co., 242 F.3d 1376, 1383 (Fed. Cir. 2001). Further, where a prior art reference does not expressly disclose an element or limitation of the claim in issue, extrinsic evidence may be used to prove said element or limitation is inherently present in the prior art. See Continental Can Co. USA, Inc. v. Monsanto Co., 948 F.2d 1264, 1268 (Fed. Cir. 1991). However, "[s]uch evidence must make clear the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill." Id. Anticipation is a question of fact, including whether or not an element is inherent in the prior art. In re Schreiber, 128 F.3d 1473, 1477 (Fed. Cir. 1997).

a. The '562 Patent

Respondents argued that the '440 application discloses each element of claim 1 of the '562 patent, and thus, the '440 application renders claim 1 of the '562 patent invalid as anticipated. (RBr at 65-73.)

Complainant argued that the '440 application does not anticipate claim 1 of the '562 patent because the '440 application does not teach checking print quality before capture occurs as required by element (f) of claim 1, and that the patent examiner reached the same conclusion during prosecution of the '562 patent. (CBr at 123.)

The staff argued that the '440 application does not anticipate claim 1 of the '562 patent because the "'440 application discloses that 'capture' occurs and then a quality check is performed," and thus, the '440 application does not meet element (f) of claim 1 of the '562 patent. (SBr at 71-72.)

The '440 application discloses an automatic fingerprint identification system and method and the only dispute among the parties regarding whether the '440 application anticipates claim 1 of the '562 patent centers on element (f) of said claim, which states, "determining whether the scanned image is ready for capture based on an expected number of prints detected in step (e) and the quality of the print images determined in step (d)." (See RBr at 72; CBr at 123; SBr at 71-72.) Thus, element (f) requires that the number of prints is detected and the quality of print images is determined before the image is captured.

The '440 application discloses the use of a scanner or camera to capture prints, which are loaded into a microprocessor for processing. (See RX-41 at [0015].) The '440 application also includes a flow diagram at Figure 3 "illustrating the improved matched system in accordance with the present invention," and including steps 200 and 210. (RX-41 at [0012], Fig. 3.) Regarding said steps 200 and 210, the '440 application states:

> In FIG. 3, the present invention is illustrated as followed [sic]. Prints are captured from a person or source, including preferably ten prints and slap prints, in step 200 as described above. The captured print records are reviewed for quality in step 210 using a quality algorithm, such as a preferred ICCS algorithm as described later. Prints that exhibit a predetermined threshold quality (step 205) are enrolled in the database as search records in step 220.

(RX-41 at [0020].) Thus, the '440 application discloses capturing prints as a first step and then

determining the quality of the captured prints. Further, in allowing the '562 patent, the Examiner distinguished the '440 application for the same reason, stating:

> The closest prior art found as a result of the aforementioned search is as follows. Lo (U.S. Publication Number 2007/0014440) discloses a system and method which scans and captures and then determines as part of the quality check whether or not the appropriate number of prints are present, or whether some prints have been duplicated, swapped, or whether or not a person is an amputee based on the comparison of their individual prints to their slap print. If an error is discovered then the prints are not enrolled in the system and a new scan and capture is done. Lo specifically discloses analyzing the prints post-capture and there is no obvious reason to modify Lo. The other prior art that is considered to be pertinent is Ohba (U.S. Patent Number 7,174,036) which discloses acquiring fingerprints in a specific sequence but does not determine whether or not to capture the fingerprints based on how many fingerprints were detected. It is for these reasons that the case is considered to be in condition for allowance.

(JX-6 at CMT006044 (emphasis added).) Respondents "agree with the [E]xaminer's reasons for distinguishing the cited reference." (RRBr at 47.) Based on the foregoing, the administrative law judge finds that capturing prints as a first step and then making a quality determination as in the '440 application does not anticipate element (f) of claim 1 of the '562 patent because claim 1 of the '562 patent requires a quality determination before capture. Hence, the administrative law judge finds that respondents have not established, by clear and convincing evidence, that claim 1 of the '562 patent is anticipated by the '440 application.

3. 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). Regarding non-obviousness, the patent statute dictates that a person is not entitled to a patent if

the differences between the claimed invention 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." 35 U.S.C. §103; see also Net MoneyIN, Inc. v. VeriSign, Inc., 545 F.3d 1359, 1371 (Fed. Cir. 2008) (stating, "differences between the prior art reference and a claimed invention, however slight, invoke the question of obviousness, not anticipation.").

The ultimate determination of whether an invention would have been obvious is a legal conclusion based on underlying findings of fact. In re Dembiczak, 175 F.3d 994, 998 (Fed. Cir. 1999). The underlying factual inquiries relating to non-obviousness include: 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, such as long-felt need, commercial success, and the failure of others. See Graham v. John Deere Co., 383 U.S. 1, 17 (1966).

The first step in an obviousness analysis requires a determination of the scope and content of the prior art, and only analogous art can be considered prior art. In re Clay, 966 F.2d 656, 658 (Fed. Cir. 1992). Whether art is analogous is a question of fact and "[t]wo criteria have evolved for determining whether prior art is analogous: (1) whether the art is from the same field of endeavor, regardless of the problem addressed, and (2) if the reference is not within the field of the inventor's endeavor, whether the reference still is reasonably pertinent to the particular problem with which the inventor is involved." Id. at 658-659.

Obviousness may be based on any one 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). Further, 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) (KSR). However, the Supreme Court has rejected a "rigid approach," regarding a patent challenger's obligation to demonstrate a "teaching, suggestion, or motivation to combine" in the prior art. Id. at 419-22. The Court stated that:

> 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.

Id. at 417-18 (emphasis added). Further, a suggestion to combine 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). "[I]n many cases a person of ordinary skill will be able to fit the teachings of multiple patents together like pieces of a puzzle." KSR, 550 U.S. at 420-21.

a. The '993 Patent

Respondents argued that the '060 patent discloses an optical system having an optical axis, as in the preamble of claim 10 of the '993 patent; a prism as in element a) of claim 10; an aperture stop as in element b) of claim 10; and a lens forming a telecentric entrance pupil as in element c) of claim 10. (RBr at 218.) Respondents further argued that the triplet lens from either the '594 patent or the '051 patent could be substituted into the device of the '060 patent to render asserted claim 10 of the '993 patent obvious and invalid. (RBr at 211, 218.)

Complainant argued that the '060 patent in combination with either the '594 patent or the '051 patent fails to disclose elements c) and e) of claim 10 of the '993 patent. (CBr at 62.) Complainant further argued that the '060 patent, the '594 patent, and the '051 patent teach away from the invention of the '993 patent and there is no motivation or suggestion to combine the references. (Id. at 63.)

The staff argued that the '060 patent does not disclose elements c), d), and e) of claim 10 of the '993 patent and that the '060 patent in combination with either the '594 patent or the '051 patent does not teach all of the elements of claim 10. (SBr at 76.) The staff further argued that "[r]espondents have not shown that the proposed combinations would have been obvious to try or that there would have been a reasonable expectation of success." (SBr at 76-77.)

i. The '060 Patent In Combination With The '594 Patent

The '060 patent discloses "a device which employs optical apparatus for comparing an object to be identified with a preselected image." (RX-31 at 1:4-5.) Figure 1 of the '060 patent depicts "the optic portion of the apparatus of [the] invention" of the '060 patent, which is an optical system with an optical axis. (RX-31 at 2:53-54.) Said optic portion includes a light

source 12, a lens 14 for deflecting light beams, a prism 18 with a surface 22 oriented at an angle greater than the angle of total internal reflection, another lens 28, and a diaphragm 30, which is an aperture stop. (RX-31 at Fig. 1; 3:1-20, 39-40, 38-40.)

Elements c) through e) of claim 10 of the '993 patent require:

> c) a first lens unit having a positive power between the aperture stop and the prism for forming a telecentric entrance pupil;
>
> d) a second lens unit having a positive power for forming a real image of the object, said second lens unit being on the image side of the first lens unit; and
>
> e) a third lens unit for correcting the field curvature of the image contributed by the first and second lens units.

(JX-1 at 10:26-34.) Regarding the two lens elements 14 and 28 of the '060 patent, lens 14 is located between the light source 12 and the prism 18 and "deflect[s] the light beams 16 into parallel relationship with respect to another." (RX-31 at 3:1-3, Fig. 1.) Thus, lens 14 of the device of the '060 patent, and not lens 28 of the '060 patent, creates a telecentric condition on the illumination side of prism 18. See Order No. 29 Joint Stipulation Regarding Technology In Issue at 5 ("In a telecentric system, the chief ray (i.e., the center ray) of every light ray bundle is parallel to the axis on the object side, image side, or both"). With respect to lens 28, the '060 patent states that, "[t]he reflected light comes out through face 24 of the prism and is focused with an achromatic lens 28 through a diaphragm 30 onto an included focal plane 32." (RX-31 at 38-40.) Thus, lens 28 is located between the prism 18 and the aperture stop 30. (See RX-31 at Fig. 1.) The '060 patent does not disclose whether lens 14 or lens 28 have a positive power or a negative power. Based on the foregoing, the administrative law judge finds that the '060 patent does not disclose a first lens unit as required by element c) of independent claim 10 of the '993

patent, a second lens unit as required by element d) of independent claim 10 of the '993 patent, or a third lens unit as required by element e) of independent claim 10 of the '993 patent because the '060 patent only discloses two lens units. Moreover, he further finds that said first lens 14 of the '060 patent, which creates a telecentric condition, is not disclosed as having positive power and is not located between the prism and the aperture stop as required by element c) of said claim 10; and said second lens 28 of the '060 patent is not disclosed as having a positive power as required by element b) of said claim 10.

Regarding respondents' argument that the triplet lens from the '594 patent could be substituted into the device of the '060 patent to render asserted claims 10, 15, and 18 of the '993 patent obvious, the '594 patent does disclose a "telecentric objective" with three lens components, the first and third lenses having a positive power and the middle lens having a negative power. (RX-25 at 4:28-32, Figure.) With respect to distortion correction and field curvature correction, the '594 patent also states:

> It is of further advantage in correcting the distortion, and also helpful in correcting the curvature of field, to make the negative meniscus element of at least one of the positive components and preferably of both positive components, of a glass with refractive index greater than 1.63. According to another preferred feature of the invention, the negative component consists of a single negative element whose refractive index is less than 1.55. Since it is the negative component principally which corrects the distortion, it is advantageous to make the curves of this lens stronger, and this may be done without making the power of the lens greater by making this lens of low refractive index.
>
> While the distortion can be corrected to a satisfactory degree by any of these features, a combination of all of them corrects the distortion without making any of the components extremely strong in curvature and thus makes them more economical to construct. Furthermore, the zonal distortion is less

noticeable if all the features are combined.

(RX-25 at 2:30-52 (emphasis added).) Thus, regarding correcting field curvature and distortion correction, the '594 patent discloses that distortion and field curvature can be at least partially corrected by including a particular negative meniscus element on one or both of the positive components; that the negative component is the principal component for correcting distortion; and that the combination of negative elements on the positive components and the curvature of the negative component can correct distortion without introducing "strong" field curvature. However, as seen from the foregoing (RX-25 at 2:30-52), the administrative law judge finds that the '594 patent does not disclose that the third lens component, i.e. the negative component, is included "for correcting the field curvature of the image contributed by the first and second lens units" as required by element e) of claim 10 of the '993 patent.

Regarding any motivation or reason for substituting the lens system of the '594 patent into the optical system of the '060 patent, respondents' expert Sasian testified:

> Q. Dr. Sasian, if a person of ordinary skill in the art was sitting in his or her office back at the time of the invention, what would they need -- what would they need to do or, excuse me, what adjustments to the '060 patent would be necessary to form a fingerprint detection device?
>
> A. Well, if I want to make a fingerprint detection device, as a person of ordinary skill, I would be familiar with the prior art. I would be familiar with the '060 patent and I would see that it is calling for an achromatic lens 28, and it would be a telecentric lens, so I would be also aware of a triplet lens such as in the '594 patent that is telecentric.
>
> And they are two references that I can combine because I need to solve the problem of finding out what is lens element 28 that is called as an achromatic lens in the '060, there are no construction of that, so I have that need to find out a lens that I

can insert there.

> In addition, the WO international application 896 teaches that one can combine a prism with a triplet lens. So I have a motivation to make a fingerprint device, I have some prior teachings, so I obviously naturally will combine such references.

(Tr. at 1270-1271 (emphasis added).) Thus, Sasian testified that one of ordinary skill in the art would have known that the telecentric lens of '594 patent would be a suitable substitute for lens 28 of the '060 patent. However, Sasian did not explain why one of ordinary skill would have chosen to substitute a telecentric lens system for lens 28 in the device of the '060 patent where the telecentric condition of said device is created by a different lens, viz. lens 14, located on the illumination side of the prism. Further, complainant's expert McWilliams testified that one of ordinary skill would not have been motivated to combine the asserted prior art:

> Q. Okay. Before we get there, Professor, do you have an opinion as to whether one of ordinary skill in the art would be motivated to combine these two references to achieve the invention of the '993 patent?
>
> A. I can't see why somebody would want to combine them.
>
> Q. Would they be motivated to combine them in the sense that they were trying to come up with an invention in the '993 patent? Would they be motivated to combine these two references and to come up with the '993 patent?
>
> A. No. If you were looking at the '060 patent, you are not going to be seeing things in play that are going to make you think of the '993. You have solved the telecentric problem on the illumination side. There is no need to have anything on the detection side at all for dealing with that.
>
> * * *
>
> Q. Okay. Would one of ordinary skill in the art, Professor, be motivated to combine the '594 patent and the '060 patent?

A. I wouldn't see a reason to combine the two.

Q. Why is that?

A. This is teaching some chromatic corrections and correcting a field curvature in this projection lens, dealing with color projection, and the '060 is dealing with fingerprint images where field curvature doesn't matter in the slightest, in creating transparencies from it.

(Tr. at 1849, 1852 (emphasis added).)

Based on the foregoing, the administrative law judge finds that respondents have not established, by clear and convincing evidence, that the combination of the '060 patent and the '594 patent discloses a third lens unit as required by element e) of claim 10 of the '993 patent for correcting the field curvature of the image contributed by the first and second lens unit. He further finds that respondents have not established, by clear and convincing evidence, why a person of ordinary skill in the art would have combined the '060 patent with the '594 patent because the '594 patent is correcting field curvature in a projection lens while the '060 patent is dealing with fingerprint imaging.

Based on the foregoing, the administrative law judge finds that respondents have not proven, by clear and convincing evidence, that claim 10 of the '993 patent is invalid as obvious in view of the '060 patent in combination with the '594 patent.

Regarding lens 28 in the '060 patent, respondents argued that said lens forms a telecentric entrance pupil because the aperture stop is located at the focal point of the lens and "[i]t is textbook science that if an aperture stop is located at the focal point of a lens, the lens forms a telecentric entrance pupil.". (See RRCFF IV.D.3.a.10.A-D.) However, contrary to respondents' assertion, the '060 patent discloses that the light "is focused with an achromatic

lens 28 through a diaphragm 30 onto an inclined focal plane 32," which does not disclose placing the aperture stop at the focal point of lens 28. (RX-31 at 3:38-40 (emphasis added).) Further, as found supra, the '060 patent discloses creating a telecentric condition with lens 14, which "deflect[s] the light beams 16 into parallel relationship one with respect to another." (RX-31 at 3:1-3; See Order 29, Joint Stipulation at 5 ("In a telecentric system, the chief ray... of every light ray bundle is parallel to the axis on the object side, image side, or both").)

Respondents further argued that the combination of the '060 patent and the '594 patent discloses a third lens unit according to element e) of claim 10 of the '993 patent. In support of said argument, respondents rely on the testimony of their expert Sasian, who testified:

> So this lens, it is, indeed, a telecentric lens with the entrance pupil at infinity. Furthermore, the '594 discloses on column 1, line 6, 7, that this objective is reasonably well corrected for distortion and curvature of the field.
>
> So there is correction for field curvature, and this is accomplished with the negative field curvature of the third negative element that corrects the field curvature of the positive component, components, the front component and the rear component that I have described before.
>
> * * *
>
> Q. Thank you, Doctor. Let's move on to RDX-5-46, which relates to claim limitation 10E.
>
> Dr. Sasian, do you have an opinion regarding whether the '060 patent and '594 patent disclose this limitation?
>
> A. Yes, because as I testified before, the triplet of the '594 patent has a third component, which is a third unit that corrects for field curvature. So this claim element 10E will also be met. It will be correcting the field curvature contributed by the positive front component and the positive rear component, which are a first and

> second lens units having positive power, contributing positive field curvature that would be corrected by the third component, which is the negative middle element that will be -- that is a third lens unit.

(Tr. at 1248-1249, 1268-1269.) However, as found supra, the '594 patent does not disclose that the negative component is introduced "for correcting the field curvature of the image contributed by the first and second lens units" as required by element e) of claim 10 of the '993 patent. Rather, as found supra, the specification of the '594 patent only describes the use of negative elements on the positive components as correcting field curvature and the negative component is only described in the specification of the '594 patent as correcting distortion.

Regarding asserted dependent claims 11, 12, 15, 17, and 18 of the '993 patent, respondents argued that claims 15 and 18 are obvious in view of the '060 patent in combination with the '594 patent. (RBr at 217-218.) As found supra, claim 10 of the '993 patent would not have been obvious in view of the asserted combination, and thus, the administrative law judge further finds that the asserted dependent claims are not obvious in view of the '060 patent in combination with the '594 patent.

ii. The '060 Patent In Combination With The '051 Patent

As found supra, the '060 patent does not disclose a first lens unit, a second lens unit, or a third lens unit according to elements c), d), and e) of claim 10 of the '993 patent, and the '060 patent discloses creating the telecentric condition in a lens 14 on the illumination side of the prism and not in a lens located between the prism and the aperture stop as required by element c) of claim 10 of the '993 patent.

Regarding respondents' argument that the triplet lens from the '051 patent could be substituted into the device of the '060 patent to render asserted claims 10, 11, 12, 15, 17 and 18

obvious, the '051 patent discloses a "bright triplet and, more particularly, to a behind-the-stop type triplet that has a wide field angle and is bright, so that it is well suited for use on photographic cameras." (RX-7 at 1:5-7.) Significantly, the parties do not dispute that the '051 patent does not disclose a telecentric lens system. (See CRFF 1150.5 ("The '051 patent does not disclose a telecentric entrance pupil as recited in claim 10"; RRCFF IV.D.3.a.67.A ("The patent simply does not expressly teach forming a telecentric entrance pupil"); SBr at 76 ("The Takato '051 patent does not expressly disclose a telecentric system").) As found supra, the device of the '060 patent does not disclose "a first lens unit having a positive power between the aperture stop and the prism for forming a telecentric entrance pupil" as in element c) of claim 10 of the '993 patent because the telecentric condition in the '060 patent is created by lens 14 and not lens 28. Thus, the administrative law judge finds that substitution of the triplet lens system of the '051 patent into the device of the '060 patent would not disclose a first lens unit as in element c) of claim 10 of the '993 patent.

Further, regarding any motivation or reason for substituting the lens system of the '051 patent into the optical system of the '060 patent, respondents' expert Sasian testified:

> Q. Dr. Sasian, if a person of ordinary skill in the art was sitting in their office with the '060 patent and the '051 patent at the time of the invention, what steps would they need to take to make a fingerprint detection device?
>
> A. Well, what they have to do is combine the -- both references, and replace lens 28 with the triplet of the '051 patent, following the indication of the '060 patent.
>
> Q. Why would they be motivated to do so?
>
> A. Because of the need to, to create a fingerprint system. The '060 patent doesn't disclose the constructional data for the achromatic

lens 28. So a person of ordinary skill would have the need to find what that achromatic lens that could be the triplet of the '051 patent.

Q. Can you explain for me why the lens 28 would need to be replaced in the '060 patent?

A. Because, again, the '060 patent does not disclose the construction of that, so a person needs to put a lens and then that person could very well use the triplet of the '051 patent, because they are well-known lenses.

(Tr. at 1280-1281.) Thus, Sasian testified that one of ordinary skill in the art would have known to substitute the lens system of the '051 patent in the device of the '060 patent because the '060 patent does not describe the construction of lens 28 and because the triplet of the '051 patent was well known. However, the administrative law judge finds that the '051 patent includes a lens system that is "well suited for use on photographic cameras" (RX-7 at 1:7-8.) He finds nothing in the record to indicate why one of ordinary skill in the art would have substituted a lens system for a camera into a fingerprint detection device.

Based on the forgoing, the administrative law judge finds that respondents have failed to prove, by clear and convincing evidence, that the device of the '060 patent in combination with the '051 patent discloses every element of claim 10 of the '993 patent or that one of ordinary skill in the art would have been motivated to combine the asserted references.

Based on the foregoing, the administrative law judge finds that respondents have not established, by clear and convincing evidence, that claim 10 of the '993 patent is obvious in view of the '060 patent in combination with the '051 patent.

Regarding asserted dependent claims 11, 12, 15, 17, and 18 of the '993 patent, respondents argued that each of said asserted dependent claims are obvious in view of the '060

patent in combination with the '051 patent. (RBr at 221-224.) As found supra, claim 10 of the '993 patent would not have been obvious in vew of the asserted combination, and thus, the administrative law judge further finds that the asserted dependent claims are not obvious in view of the '060 patent in combination with the '594 patent.

b. The '344 Patent

Respondents argued regarding the '344 patent that asserted independent claim 1, claim 7 dependent on claim 1, independent claim 19, independent claim 41, and each of claims 42, 43, and 45, which are dependent on claim 41, are invalid as obvious in view of the '949 patent alone or in combination with the '656 patent. Regarding independent claims 1 and 41 of the '344 patent, respondents argued that the '949 patent teaches every element of said independent claims except for three levels of quality classification, viz. acceptable, possibly acceptable, or unacceptable. However, it is further argued that the '949 patent teaches two levels of quality classification and that implementing a third level of quality classification would have been obvious. (RBr at 169-180.) Regarding independent claim 19, respondents argued that said claim 19 is obvious in view of the '949 patent alone because the '949 patent teaches all of the limitations of said claim 19. (RBr at 178-180.) Respondents also argued that the '656 patent discloses three levels of quality classification and thus, that the combination of the '949 patent and the '656 patent would render claims 1, 7, 41, 42, 43, and 45 of the '344 patent obvious. (RBr at 181.)

Complainant argued that none of the asserted claims of the '344 patent are rendered obvious by the '949 patent alone or in combination with the '656 patent. Specifically regarding independent claims 1 and 41 of the '344 patent, complainant argued that the '949 patent does not

teach quality classification and only determines whether two prints are the same; that the '949 patent does not disclose "determining whether the processed combined image is of a good quality;" and that the '646 patent does not "cure the deficiencies" of the '949 patent. (CBr at 198-202.) Regarding independent claim 19 of the '344 patent, complainant argued that the '949 patent does not disclose elements (d) and (g) of claim 19. (CBr at 201-202.)

The staff argued that respondents have not proven by clear and convincing evidence that the asserted claims of the '344 patent are invalid as obvious. Regarding claims 1, 7, 41, 42, 43, and 45 of the '344 patent, the staff argued that the combination of the '949 patent with the '656 patent does not teach quality classification of three levels based on a comparison with a prior image. (SBr at 80-81.) Regarding independent claim 19 of the '344 patent, the staff argued that the '949 patent does not disclose binarization as the term is used in the '344 patent; that the '949 patent does not determine quality based on area and shape; and that "[r]espondents have not proposed any reason why the ['949 patent] would have been modified to match these limitations of the '344 patent." (SBr at 79-80.)

i. Claim 1

Regarding respondents' argument that claim 1 of the '344 patent is obvious in view of the '949 patent alone, the '949 patent discloses a personal verification apparatus at Figure 3, which is described to include:

> A finger table 11 consists of, e.g., a transparent prism. A person to be verified places, e.g., two fingers Fa and Fb on the finger table 11 when finger image data is input. When light is emitted from a light source 12 disposed below the finger table 11 through the finger table 11, the image data of the fingers Fa and Fb placed on the finger table 11 is read by a camera 13 as a reflection optical image.

(RX-12 at 4:14-22.) Said apparatus also includes "separating means for separating the image data of the plurality of fingers input by the input means into image data for the respective fingers." (RX-12 at 46-49.)

Regarding element (c) of claim 1 of the '344 patent, which requires "using concentrations of black pixels arranged in oval-like shapes in the combined image to determine individual fingerprint areas and shapes," the administrative law judge construed said element supra to mean "identifying concentrations of black pixels, which have oval-like shapes, to determine individual fingerprint areas and shapes." The '949 patent discloses taking an "image pattern" as represented in Fig. 4A, finding a "sum signal Xab" as represented in Fig. 4B, finding a "y coordinate (separating point) yt which separates the two fingers Fa and Fb," and then generating "feature data" for each of the two fingers as represented in Figs. 4C and 4D. (RX-12 at 5:26-65, Figs. 4A-4D.) Further regarding said "feature data," the '949 patent discloses:

> These feature data Aa(y) and Ab(y) respectively have minimum peaks (minimum values) at positions of the lateral wrinkles corresponding to the joint portions of the fingers, and these minimum peaks serve as parameters (individuality) to verify the person himself.

(RX-12 at 5:66-6:2.) Thus, the '949 patent discloses finding a separating point yt between two fingers and hence, the individual fingerprint areas are determined from the separating point yt. However, after the individual fingerprint areas are determined, the '949 patent only identifies minimum peaks corresponding to individual fingerprint images to verify a person's identity, and the '949 patent does not disclose determining the individual fingerprint shapes. Based on the foregoing, the administrative law judge finds that the '949 patent does not teach element (c) of claim 1 of the '344 patent insofar as the '949 patent does not disclose determining individual

fingerprint shapes.

Respondents argued that the '949 patent discloses a histogram analysis that teaches element (c) of claim 1 of the '344 patent. (See RFF 863-867.) In support of said argument, respondents relied on the testimony of their expert Jones, who testified:

> Q. All right. Thank you.
>
> Let's go on to the next slide, RDX-6C-67.
>
> A. Yes.
>
> Q. What does this show?
>
> A. This is addressing element C of claim 1. And under Complainant's construction, actually, as I will mention in a moment, and it refers to a different diagram in the Takeda, figures 4A, 4B, and 4D.
>
> The claim element says using concentrations of black pixels arranged in oval-like shapes in the combined image to determine individual fingerprint areas and shapes. So that 4A is a representation of a filtered and binarized image of two fingers.
>
> And you can see that the fingertips themselves are oval-like shapes. What is happening here is X and Y projections of the image, the X projection is in figure 4B and figures 4C and D show the Y projections.
>
> The key points that are being indicated there in these curves, you can see clearly show the space between the fingers in 4B and the joint locations in 4C, so those concentrations of black pixels are being used to determine where those individual fingerprint areas and shapes are.
>
> And the reason that I say under Complainant's construction, note that there is no need here, there is no processing to determine ovality or shapes or anything, so even under their construction, I believe this claim element is met.

(Tr. at 1608-1610 (emphasis added).) However, while the specification of the '949 patent, cited

supra, discloses finding a separating point for the combined image and then finding minimum peaks for individual fingers, said separating point and minimum values are not used to determine the shapes of the individual fingerprints.

Regarding element (e) of claim 1 of the '344 patent, which requires "comparing each of the separated individual fingerprint images to a corresponding previously captured acceptable fingerprint image," the administrative law judge construed said element, supra, to mean "comparing each of the separated fingerprint images to historical data corresponding to an acceptable fingerprint image." The parties do not dispute that the '949 patent discloses a comparison between separated individual fingerprint images and a corresponding previously captured fingerprint image. (RFF 871 (undisputed in relevant part).) Thus, the parties only dispute whether the previously captured fingerprint image was "acceptable" as required by element (e) of claim 1 of the '344 patent. Further, respondents acknowledged that the '949 patent does not disclose a quality determination with respect to said previously captured fingerprint image, but respondents argued that "[t]he previously registered fingerprint data is inherently an 'acceptable' fingerprint image, since otherwise it could not be used for fingerprint matching." (RBr at 175.) However, respondents did not cite to any evidence in the record to support said inherency argument. Based on the foregoing, the administrative law judge finds that the '949 patent does not teach element (e) of claim 1 of the '344 patent insofar as the '949 patent does not disclose a comparison with a "previously captured acceptable fingerprint image." (JX-1 at 18:1-3 (emphasis added).)

Regarding element (f) of claim 1 of the '344 patent, said element requires "classifying the separated individual fingerprint images as being either acceptable, possibly acceptable, or

unacceptable according to the comparing step" (JX-2 at 18:4-6) and the administrative law judge has construed the term "quality" supra to mean "a measure of acceptability." As found supra, the '949 patent discloses comparing individual fingerprint images with previously captured fingerprint images to "determine whether the person to be verified is the person himself or another person." (RX-12 at 7:38-40.) As part of the verification process, the '949 patent discloses making a determination of "coincidence" or "noncoincidence" for a first finger fa and then for a second finger fb (See RX-12 at 7:40-64), which the administrative law judge finds are two measures of acceptability corresponding to the "acceptable" and "unacceptable" levels included in element (f) of claim 1 of the '344 patent. However, the '949 patent does not disclose a third level of quality corresponding to the "possibly acceptable" level of quality as required in element (f) of claim 1 of the '344 patent.

Regarding whether it would have been obvious to include a third level of quality, viz. a "possibly acceptable" level, in the method of the '949 patent, respondents expert Jones testified:

> Q. All right. Let's have RDX-6C-70 up, please. What does this show, Dr. Jones?
>
> A. So this is showing the -- first shows the claim element 1F of the '344, which reads "quality classifying the separated individual fingerprint images as being either acceptable, possibly acceptable, or unacceptable according to the comparing step."
>
> And there are a couple of sections here simply because there is text in between in the patent to explain these equations. But what these equations are doing is expressing mathematically those comparisons that are going on.
>
> And what I want to emphasize is that there are two particular comparisons of quantities that are referred to as S sub B and, I believe, S sub A. It is difficult for me to read at the moment.

What is happening here is those two quantities are being computed on each of the stored image and the new image. And then comparisons are being made on those two measures between the stored image and the new image. So two comparisons are made.

And what I am trying to demonstrate here, the computation at the bottom is merely a sum of those two things weighted. So you would be able to see three different types of correspondence. That is, neither of the fingers matched. Recall what we're doing here is we're comparing two fingers to two stored fingers. Neither of the fingers matched – that would be the lowest level. Both fingers matched -- that would be the highest level.

And then only one of the fingers matched -- and that would be a middle level. So to me that's a natural demonstration of unacceptable, where neither matched; acceptable, where both matched; and then if only one finger matched, then that would be possibly acceptable.

So I believe that this satisfies claim element 1F, which calls for those three named levels of acceptability. And, finally, that entire discussion I gave also applies to the classifier element of claim 41 of the '344.

* * *

Q. All right. Very well.

Let's go to the next slide, please, RDX-6C-71. What is shown on this slide?

A. This is merely more of the calculations, and I believe we have probably covered this point, so I really have nothing more to say to this. This was just more of the calculations that lead to that determination of one or both fingers.

(Tr. at 1612-1614, 1618-1619 (emphasis added).) While the '949 patent does disclose verification of individual fingerprints, contrary to the testimony of Jones, the '949 patent does not disclose a third level of classification where one fingerprint is verified and the other is not.

Thus, with respect to Fig. 6, the '949 patent discloses:

> In accordance with the collation result obtained for the forefinger Fa and the middle finger Fb, it is finally determined whether the person to be verified is the person himself (steps 61 and 63). In this case, only when the person himself is determined for both the fingers Fa and Fb (step 61), the person to be verified is determined as the person himself. Unless the person himself is determined for both the fingers Fa and Fb (step 63), the person to be verified is not determined as the person himself. However, when the security control is not so important, in order to improve passing efficiency and to achieve a smooth operation, the person to be verified may be determined as the person himself if the person himself is determined for only one finger.

(RX-12 at 8:1-14 (emphasis added).) Thus, in the situation where coincidence is determined for one finger and noncoincidence is determined for the other finger, the '949 patent discloses that one of two outcomes are possible, viz. the person is determined to be someone else or the person is verified as himself. There is nothing in the record to indicate how or why the implementation of third level of quality classification would have been obvious to one of ordinary skill in the art based on the '949 patent alone.

Regarding element (h) of claim 1 of the '344 patent, said element requires "determining whether the processed combined image is of a good quality." As found supra, the '949 patent discloses making a coincidence determination for each individual fingerprint image and verifying a user's identity based on said coincidence determinations. Thus, the device and method of the '949 patent treat the individual fingerprint images separately in verifying a user's identity, the final verification is based on assessment of the individual fingerprint images, the combined image is not used to determine coincidence or verification, and the '949 patent does not disclose any assessment of the combined image as required by element (h) of claim 1 of the '344 patent.

(See RX-12 at Fig. 6.)

Respondents argued that the '949 patent teaches element (h) of claim 1 of the '344 patent because "a fingerprint that is deemed acceptable by the collation process would be considered to have a measure of acceptability that is adequate and the fingerprint's attributes would be registered in the dictionary section." (RFF 883.) In support, respondents relied on Figure 5 of the '949 patent and the testimony of their expert Jones, who testified:

> Q. Okay. Let's go to the next slide, please, RDX-6C-73. What does this show?
>
> A. So this is addressing claim element 1H. And here I am specifically discussing Complainant's construction. This is determining whether the processed combined image is of a good quality.
>
> And so this refers to figure 5 of RX-12. And if you look at those blocks, the second block generates the sum signal of pixel density in X direction and the third block computes the Y coordinates for separating the finger image, and then the fourth block generates the pixel density in the Y direction for the four finger and then for the middle finger.
>
> What is happening here is sizes and dimensions -- I shouldn't say sizes. What is being computed here are dimensions of the boxes. So -- and there is some area determination here as well.
>
> So if we adopt Complainant's construction of determining good quality that it could be related to just area and overall things like height and width, then this clearly meets determining whether it is of a good quality.
>
> And I would like to point out the final decision here is registering in the dictionary section. So a determination is being made of what is the -- what are these attributes of the image.

(Tr. at 1620-1621 (emphasis added).) However, Figure 5 of the '949 patent relates only to the registration of data for use in the "dictionary section," which corresponds to a previously

captured fingerprint image and not the combined image referred to in element (h) of claim 1 of the '344 patent. There is no indication in the record regarding how or why any quality determination related to registration of fingerprint data in the "dictionary section" would teach or make obvious a quality determination related to the "combined image" as in element (h) of claim 1 of the '344 patent.

Regarding respondents' argument that claim 1 of the '344 patent is obvious in view of the '949 patent in combination with the '656 patent, respondents have argued that element (f) of claim 1 of the '344 patent would have been obvious in view of the combination of the '949 patent with the disclosure of three levels of quality classification in the '656 patent. The '656 patent "discloses a system and method for determining the quality of fingerprint images based on a ratio of weighted sums of qualities of blocks of pixels" (CFF VI.D.2.5 (undisputed)), and the parties do not dispute that the '656 patent discloses quality classification into three levels corresponding to acceptable, possibly acceptable, or unacceptable. (RFF 908 (undisputed in relevant part).) Further, regarding the motivation to combine the '949 patent with the quality classification scheme in the '656 patent, Jones testified:

> Q. And what reason, if any, would a person of ordinary skill in the art back in the time these patents were applied for, would use, would have to combine these two references?
>
> A. Well, both patents are in the same field. Both patents are related to systems that acquire and process fingerprint images.
>
> Both patents were in existence at the time in the same field of art and would be readily accessible. And it would be an obvious conclusion.

(Tr. at 1630-1631 (emphasis added).) Respondents' expert Jones, however, did not provide any reason regarding why a person of ordinary skill in the art would have been motivated to

implement a quality classification scheme as in the '656 patent in the method and device of the '949 patent or how such a combination could have been implemented.

Based on the foregoing, the administrative law judge finds that respondents have not established, by clear and convincing evidence, that claim 1 of the '344 patent would have been obvious to one of ordinary skill in the art in view of the '949 patent alone or in combination with the '656 patent.

ii. Claim 7

Claim 7 of the '344 patent depends from claim 1 and adds the limitation "determining whether the combined image is captured from a left or a right hand." As found supra, claim 1 would not have been obvious in view of the '949 patent alone or in combination with the '656 patent, and hence, he further finds that claim 7 would not have been obvious in view of the asserted combinations.

iii. Claim 19

Regarding claim 19 of the '344 patent, respondents argued that the invalidity analysis for claim 1 elements (a) and (b) apply to elements (a) and (b) of claim 19; that the analysis for claim 1 element (c) applies to elements (e) and (f) of claim 19; and that claim 19 includes three limitations not present in claim 1, viz. elements (c), (d) and (g) of claim 19. (RBr at 178-179.) As found supra, the '949 patent does not disclose or make obvious element (c) of claim 1 of the '344 patent because it does not determine individual fingerprint shapes, and thus he further finds that the '949 patent does not teach element (f) of claim 19 of the '344 patent, which requires "detecting a fingerprint shape based on an arrangement of the concentrated black pixels in an oval-like shape in the binarized fingerprint image." The administrative law judge also finds that

the '949 patent does not teach or make obvious element (g) of claim 19 of the '344 patent, which requires "determining whether the detected fingerprint area and shape are of an acceptable quality," because the '949 patent does not disclose detecting the fingerprint shape.

Regarding element (c) of claim 19 of the '344 patent, which requires "filtering the fingerprint images," respondents' expert Jones testified:

> Q. All right. Let's have the next slide, please, RDX-6C-74. What is your opinion here?
>
> A. So this is referring to claim 19 now, but it is element C, which specifically calls out filtering the fingerprint image. And I have gone back to those image drawings, if you will, and if you recall, that image on the left is clearly a processed image.
>
> The way the pixel densities are being generated in the X and Y direction mandate that the image has been filtered in order to create those projections. So I believe that the processing here satisfies limitation C.
>
> * * *
>
> Q. What is your opinion, Dr. Jones, as to whether or not this is inherent?
>
> A. Well, I may have used the wrong word. I said it is mandated. It is clear that filtering took place in order to do this processing, and so I believe that would be inherent. I'm sorry if I used the wrong word.

(Tr. at 1621-1623 (emphasis).) Based on said testimony, respondents asserted that the '949 patent inherently discloses filtering images. (RFF 890.) However, the administrative law judge finds that Jones did not provide any explanation regarding why generating pixel densities in the X and Y direction indicates that the '949 patent inherently discloses filtering images as required by element (c) of claim 19 of the '344 patent.

Regarding element (d) of the '344 patent, which requires "binarizing the filtered fingerprint image," respondents expert Jones testified:

> Q. Okay. And let's have the next slide, please, RDX –
>
> A. Yes. So this refers to element 19D.
>
> Q. 6C-75. Wait. I'm sorry. RDX-6C-75. Yes, please.
>
> A. Yes, I'm sorry. This is element 19D of the '949, which refers to binarizing the filtered fingerprint image. And it is clear from the description in the '949 that the input video image goes through an A-to-D converter to generate, and for convenience, I have merely put up figure 4A again. And the issue is that for that image to be generated, that the video signal passed through an A-to-D converter, which converted the analog signal into binary representation, creating binary data.
>
> And so I believe that that satisfies element 19D. And that would be the same as 42.

(Tr. at 1627 (emphasis added).) Thus, Jones testified that the analog to digital conversion of the fingerprint image in the '949 patent meets element (d) of claim 19 of the '344 patent. However, regarding the analog to digital conversion compared to binarizing, complainant's expert McWilliams testified:

> But that analog-to-digital conversion is by no means the binarizing process described that we have been addressing all week in these patents. This is a way of representing the time dependent amplitude of a signal when you do an A-to-D conversion and putting it into digital signal format.
>
> As opposed to that, the binarization we're speaking about for fingerprint images here is taking pixels in the image and deciding whether they are white or black. The A-to-D conversion that is spoken about here has a vastly larger number of choices than just 0 or 1 or white or black.

(Tr. at 1810-1811 (emphasis added).) Further, the specification of the '344 patent describes the

binarization process. Thus, it states:

> In step 706, a binarization process is performed. The binarization process can remove all of the gray areas and replace them with either black or white pixels based on a black and white threshold point. In one embodiment, the binarization process begins by taking an average gray scale value of the filtered image. In this instance, the average gray scale value is the black and white threshold point. In this embodiment, all of the pixel values above the average value are replaced with white pixels and all the pixel values equal to and below the average value are replaced with black pixels. The resulting image is comprised of all black and white pixels.

(JX-2 at 15:32-43 (emphasis added).) Based on the foregoing, the administrative law judge finds that the '949 patent does not teach binarizing the filtered fingerprint image as required by element (d) of claim 19 of the '344 patent.

Based on the foregoing, the administrative law judge finds that respondents have failed to establish by clear and convincing evidence that claim 19 of the '344 patent would have been obvious in view of the '949 patent.

iv. Claims 41, 42, 43, and 45

Regarding independent claim 41 and claims 42, 43, and 45, which are dependent on claim 41, respondents argued that the '949 patent discloses the elements of these claims based upon their obviousness arguments related to independent claim 1, dependent claim 7, and independent claim 19. (RBr at 180-181.) As found supra, the asserted prior art does not render independent claim 1, dependent claim 7, or independent claim 19 obvious, and thus, the administrative law judge finds that respondents have failed to establish, by clear and convincing evidence, that independent claim 41 and each of claims 42, 43, and 45, which are dependent on claim 41, would have been obvious in view of the '949 patent alone or in combination with the '656 patent.

c. The '562 Patent

i. The '440 Application

Respondents argued that dependent claims 5, 6, 7, and 12 and independent claim 30 are obvious in view of the '440 application.[16] (RBr at 73-74.) Specifically, with respect to claims 5, 6, and 7 of the '562 patent, respondents argued that the "'440 Application also discloses scanning to obtain a subsequent (second) scanned image as recited in claim 5 of the '562 patent... [and] using timeout periods would be obvious to a person of ordinary skill in the art." (RBr at 73.) Regarding claim 12, respondents argued that "using predetermined capture delay time period would be obvious to a person of ordinary skill in the art." (RBr at 73-74.) With respect to claim 30, respondents argued that "functionality that implements claims 1 and 12 would also implement claim 30... [and] [f]or the reasons stated above for claims 1 and 12, the Lo '440 Application renders obvious claim 30." (RBr at 74.)

Complainant argued that the '440 application does not disclose or make obvious all of the elements of dependent claims 5, 6, 7, and 12 and independent claim 30. (CBr at 123-125.) Complainant also argued that respondents' expert Jones did not provide any substantive testimony regarding whether the '440 application renders the asserted claims of the '562 patent obvious. (Id. at 124-125.)

The staff argued that while respondents assert that dependent claims 5, 6, 7, and 12, and independent claim 30 would have been obvious in view of the '440 application, the '440 application does not "satisfy the limitation of both independent claims requiring that the system

---

[16] As found supra, the '440 application does not anticipate claim 1 of the '562 patent application, and respondents have not argued that claim 1 would have been obvious in view of the '440 application.

determine whether the image is 'ready for capture';" that "[r]espondents' obviousness arguments do not address this limitation;" and that "[r]espondents have presented no evidence that it would have been obvious to modify the Lo '440 application to perform the quality checks before capture." (SRBr at 50.)

As found supra, the '440 application does not teach element (f) of claim 1 of the '562 patent because the '440 application discloses capturing a print image and then performing a quality determination while element (f) of claim 1 of the '562 patent requires a quality determination before capture. Further, respondents have not argued that said element (f) of claim 1 of the '562 patent would have been obvious in view of the '440 application. Thus, the administrative law judge finds that respondents have failed to establish by clear and convincing evidence that claims 5, 6, 7, and 12 of the '562 patent, which depend from claim 1, would have been obvious in view of the '440 application.

Regarding claim 30 of the '562 patent, element (f) of claim 30 requires "determining whether the scanned image is ready for capture based on an expected number of prints detected in step (e) and the quality of the print images determined in step (d)." (JX-3 at 14:52-55.) As found supra, the '440 application discloses capturing prints as a first step and then determining the quality of the captured prints, and thus does not disclose determining quality of the print images before capture. Respondents have not presented any evidence to show that it would have been obvious to modify the '440 application to perform quality checks before capture. Hence, the administrative law judge finds that respondents have failed to establish, by clear and convincing evidence, that claim 30 of the '562 patent would have been obvious in view of the

'440 application.[17]

B. 35 U.S.C. § 112, Second And Sixth Paragraphs

Respondents argued that "[s]everal of the asserted claims of the '344 fail to 'particularly point [] out and distinctly claim [] the subject matter which the applicant regards as his invention,' rendering those claims invalid under the enablement requirement 35 U.S.C. §112 ¶ 2." (RBr at 164-5.) In support, it is argued that complainant's "proposed constructions of 'quality' and 'good quality' would prevent one skilled in the art from understanding the proper scope of claims 1, 7, 19, and 41;" that complainant has proposed that "quality" be construed as a "measure of acceptability," and "good quality" as "measure of acceptability that is adequate;" and that one skilled in the art cannot possibly understand the bounds of the limitations "measure of acceptability" or "measure of acceptability that is adequate." (RBr at 165.)[18] It is further argued that the phrase "either acceptable, possibly acceptable, or unacceptable" in claims 1 and 41 of the '344 patent are indefinite under complainant's proposed non-construction, that complainant has asserted that this term be given its plan and ordinary meaning; that within the context of the biometrics industry, these words are no more objectively meaningful than in the world at large; and that a person of ordinary skill in the art would not understand the phrase "acceptable, possibly acceptable, or unacceptable" to have a particular meaning outside of the

---

[17] In view of the findings of the administrative law judge, supra, that respondents have failed to establish, by clear and convincing evidence, that the asserted claims of the '993, '344, and '562 patents are anticipated or obvious, complainant's arguments with respect to secondary considerations have been mooted.

[18] The administrative law judge in the claim construction section has found that a person of ordinary skill in the art would interpret the claim term "quality" as a "measure of acceptability" and the claim term "good quality" as "a measure of acceptability that is adequate".

context of the '344 patent. (RBr at 167.)[19] Respondents further argued that the construction of the term "quality" in claims 1, 5, 7, and 30 of the '562 renders all of the asserted claims of the '562 patent invalid for failure to comply with the definiteness requirement of 35 U.S.C. § 112, second paragraph. (RBr at 65.) Respondents also argued with respect to the asserted claims of the '344 patent that the terms separator (claim 41), comparator (claim 41), image quality determining device (claim 41), and area determining device (43) have no corresponding structure disclosed in the specification; and that as these terms fail to comply with statutory requirements under 35 U.S.C. § 112, sixth paragraph, these claims 41 and 43 (and claims 42 and 45, which depend on 41) are invalid. (RBr at 168.)

The staff argued that while respondents contended that various claims are invalid for indefiniteness; that the limitations of both the '344 and '562 patents concerning "quality" are invalid under complainant's construction; that the limitations of the '344 patent calling for "acceptable, possibly acceptable, and unacceptable" quality classifications are invalid under complainant's construction; and that various alleged "means-plus-function" limitations of the '344 patent are invalid for failure to disclose a corresponding structure, the staff is of the view that none of the claims at issue are invalid for indefiniteness. (SRBr at 51.) The staff further argued that while respondents argued that the phrases "separator," "comparator," "image quality determining device," and "area determining device" from the '344 patent are indefinite because they lack a corresponding structure in the specification, these limitations are not subject to 35 U.S.C. § 112, ¶ 6, and respondents' argument is therefore not applicable; that even assuming that

---

[19] The administrative law judge in the claim construction section has found that a person or ordinary skill in the art would construe the claim term "acceptable quality" as "capable or worthy of being generally approved and further dependent on a customer's requirement."

said limitations are written in "means-plus-function" format, the limitations are still not indefinite because the specification discloses a corresponding structure for each. (JX-2 at Fig. 6 7:58-61, 14:17-18 (separator), 14:29-33, 15:50-57 (comparator), Fig. 6, 14:56-62 (image quality determining device), Fig. 7, 15:43-49 (area determining device)). (SRBr at 51-2.)

Complainant argued that respondents have not met their burden of establishing, by clear and convincing evidence, that any asserted claims of the '344 patent or of the '562 patent are invalid for indefiniteness. (CRBr at 81, 138.)

Section 112 paragraph 2 of the Patent Act requires that a patent specification conclude with one or more claims "particularly pointing out and distinctly claiming subject matter which the applicant regards as his invention." 35 U.S.C. § 112, ¶ 2. The Federal Circuit has stated that the standard for assessing whether a patent claim is sufficiently definite to satisfy the statutory requirement is as follows: If one skilled in the art would understand the bounds of the claim when read in light of the specification, then the claim satisfies section 112 paragraph 2. Miles Labs., Inc. v. Shandon, Inc., 997 F.2d 870, 875 (Fed.Cir.1993).

Sixty years ago the Supreme Court explained the reason underlying the indefiniteness doctrine in United Carbon Co. v. Binney & Smith Co., 317 U.S. 228, 236, 232 (1942):

> A zone of uncertainty which enterprise and experimentation may enter only at the risk of infringement claims would discourage invention only a little less than unequivocal foreclosure of the field. Moreover, the claims must be reasonably clear-cut to enable courts to determine whether novelty and invention are genuine.

In determining whether what the Supreme Court has stated is met, i.e., whether "the claims at issue [are] sufficiently precise to permit a potential competitor to determine whether or not he is infringing," see Morton Int'l, Inc. v. Cardinal Chem. Co., 5 F.3d 1464, 1470, (Fed.Cir.1993),

significantly the Federal Circuit has not held that a claim is indefinite merely because it poses a difficult issue of claim construction. To the contrary, the Federal Circuit engages in claim construction every day, and cases frequently present close questions of claim construction on which expert witnesses, trial courts, and even judges may disagree. Under a broad concept of indefiniteness, all but the clearest claim construction issues could be regarded as giving rise to invalidating indefiniteness in the claims at issue. Moreover the Federal Circuit has not insisted that claims be plain on their face in order to avoid condemnation for indefiniteness. Rather, what the Federal Circuit has asked is that the claims be amenable to construction, however difficult that task may be. If a claim is insolubly ambiguous, and no narrowing construction can properly be adopted, it has held the claim indefinite. However if the meaning of the claim is discernible, even though the task may be formidable and the conclusion may be one over which reasonable persons will disagree, it has held the claim sufficiently clear to avoid invalidity on indefiniteness grounds. See, e.g., Modine Mfg. Co. v. U.S. Int'l Trade Comm'n, 75 F.3d 1545, 1557, (Fed.Cir.1996). In Modine the intervenors argued that the claims are invalid for indefiniteness if "relatively small" is construed as larger than exactly 0.040 inch. The Federal Circuit indicated that technical terms are not per se indefinite when expressed in qualitative terms without numerical limits. Thus it stated:

> When claims are amenable to more than one construction, they should when reasonably possible be interpreted so as to preserve their validity. Whittaker Corp. by its Technibilt Div. v. UNR Indus., Inc., 911 F.2d 709, 711, 15 USPQ2d 1742, 1744 (Fed.Cir.1990); ACS Hosp. Sys., Inc. v. Montefiore Hosp., 732 F.2d 1572, 1577, 221 USPQ 929, 932 (Fed.Cir.1984). In this case the specification itself used the terms "relatively small," and "about 0.015-0.040," and the construction required to preserve the claims' validity was simply that "relatively small" and "about 0.015-0.040" not include invalidating prior art. It was evident from the

> prosecution history that the patentability of claims 9 and 10 did not require an exact numerical limit of the hydraulic diameter. Mathematical precision should not be imposed for its own sake; a patentee has the right to claim the invention in terms that would be understood by persons of skill in the field of the invention. See Shatterproof Glass Corp. v. Libbey-Owens Ford Co., 758 F.2d 613, 624, 225 USPQ 634, 641 (Fed.Cir.), cert. dismissed, 474 U.S. 976, 106 S.Ct. 340, 88 L.Ed.2d 326 (1985) ("if the language is as precise as the subject matter permits, the courts can demand no more").

By finding claims indefinite only if reasonable efforts at claim construction prove futile, the Federal Circuit accords respect to the statutory presumption of patent validity, see N. Am. Vaccine, Inc. v. Am. Cyanamid Co., 7 F.3d 1571, 1579, 28 USPQ2d 1333, 1339 (Fed.Cir.1993), and protects the inventive contribution of patentees, even when the drafting of their patents has been less than ideal.

Respondents argued that multiple elements of claim 1 of the '562 patent would allegedly be redundant under complainant's construction of "quality." (RPost at 38.) Specifically, respondents asserted that under complainant's construction, elements (e) and (f) of claim 1 are redundant of element (d). (RPost at 38.) However only element (d) recites "determining print quality". Element (f) merely refers back to the quality of the print images determined in step (d). Respondents argued that "measure of acceptability" is "wholly subjective" and does not "define the boundaries of the claims' scope." (RPost at 37-38.) However implementing an invention based on to-be-determined requirements does not render a claim indefinite. In Orthokinetics, Inc. v. Safety Travel Chairs, Inc., the Federal Circuit determined that a claim reciting "so dimensioned" is not indefinite even though the corresponding dimensions would change. 806 F.2d 1565, 1575-76 (Fed. Cir. 1986) (evaluating the limitation "wherein said front leg portion is so dimensioned as to be insertable through the space between the doorframe of an automobile

and one of the seats thereof"). According to the Federal Circuit, the claim was sufficiently definite because one of ordinary skill would have determined the appropriate dimensions for each specific application. With respect to both the '562 patent and the '344 patent, the administrative law judge finds that one of ordinary skill would understand that she or he can select the appropriate methods for determining quality based on the relevant application. The administrative law judge finds that respondents have not come close to meeting their burden to establish, by clear and convincing evidence, that the claim is "insoluably ambiguous." Datamize, LLC v. Plumtree Software, Inc., 417 F.3d1342, 1347 (Fed. Cir. 2005) (citing Novo Indus., L.P. v. Micro Molds Corp., 350 F.3d 1348, 1353 (Fed. Cir. 2003)).

Respondents argued that complainant's expert McWilliams offered no testimony as to how one of skill in the art would understand 'quality' in the '562 patent. (RPost at 36.) However McWilliams testified that one of ordinary skill in the art world understand quality to be a "measure of acceptability." (Tr. at 615-17.) Respondents contended that "McWilliams declined to answer" when asked how a person of ordinary skill in the art would understand "quality of print images." (RPost at 36.) However McWilliams testified that the phrase "quality of print images" does not need to be construed, because the terms "quality" and "print images" had already been construed. Further, McWilliams testified that "[t]he quality of the print images can be determined by any of a number of standards ...." (Tr. at 617-18.)

Based on the foregoing, and referring to the second paragraph of 35 U.S.C. § 112 the administrative law judge finds that respondents have not established, by clear and convincing evidence, that any of the asserted claims of the '344 and '562 patents are invalid for indefiniteness. (35 U.S.C. §112, Second Paragraph). Moreover for the reasons set forth in

Section VIII. B. 7 supra, the administrative law judge finds that respondents have not established that certain limitations of asserted claims of the '344 patent are in "means-plus-function" format pursuant to the sixth paragraph of 35 U.S.C. § 112.

XI. Domestic Industry

As a prerequisite to finding a violation of Section 337, complainant must establish that "an industry in the United States, relating to the articles protected by the patent ... concerned, exists or is in the process of being established." 19 U.S.C. § 1337(a)(2). The domestic industry requirement of section 337 consists of two prongs: the technical prong and the economic prong.[20] Certain Variable Speed Wind Turbines and Components Thereof, Inv. No. 337-TA-376, USITC Pub. 3003, Comm'n Opinion at 14-17 (1996).

For purposes of satisfying the technical prong of the domestic industry requirement, the test for claim coverage is the same as the test for claim coverage used in patent infringement determinations. See Certain Ink Jet Print Cartridges and Components Thereof, Inv. No. 337-TA-446, Comm'n Op. at 6, (May 2, 2002). Thus, the patent claims are construed, then the complainant's products are compared against the construed claims to determine whether it practices each and every claim limitation. See id. at 6-9. To satisfy the technical prong of the domestic industry requirement, complainant need only establish that it practices at least one claim of each of the asserted patents. Id. at 5 n.3.

---

[20] Order No. 24, which issued on February 16, 2011 granted complainant's Motion No. 720-26 that it satisfies the economic prong of the domestic industry requirement. The Commission non-reviewed Order No. 24 on March 11, 2011.

A. The '993 Patent

Complainant argued that the ID500 device practices claim 10, 12, 15, and 18 of the '993 patent. (CBr at 217.)

Respondents argued that complainant has failed to meet its burden to show that the ID 500 device practices any claim of the '993 patent because complainant's expert's testimony did not provide "evidence showing that the first lens unit forms a telecentric entrance pupil," and "[c]omplainant has presented no evidence that shows the third lens unit in the ID-500 corrects the field curvature contributed by the first and second lens units." (RBr at 241.)

The staff argued that complainant has shown by a preponderance of the evidence that it practices one or more claims of the '993 patent.

The parties do not dispute that complainant's ID500 device practices the preamble and elements a), b), and d) of claim 10 of the '993 patent. (CFF VIII.C.1.a.2, CFF VIII.C.1.a.15, CFF VIII.C.1.a.17, CFF VIII.C.1.a.24, CFF VIII.C.1.a.27 (all undisputed in relevant part).)

Regarding element c) of claim 10 of the '993 patent, which requires "a first lens unit having a positive power between the aperture stop and the prism for forming a telecentric entrance pupil," respondents' only dispute that complainant's expert McWilliams did not provide testimony that the first lens unit forms a telecentric entrance pupil. (See RBr at 241.) Regarding the first lens unit of the ID500 device, McWilliams testified:

> Q. Okay. Let's go to CDX-1C.127, identifying the first lens unit as the next limitation.
>
> A. Again, the first lens unit is on the left photo here on JPX-43, I am holding it in my hand. In the ID-500 they actually have two of these systems acting side by side, so I'm going to take my analysis down through one of the systems.

{

} The excerpts on the right are from Cross Match drawings.

Q. For the record the excerpts are CX-235C and 226C and this is slide CDX-1C.128.

And is it your opinion that this first lens unit has a positive power located between the aperture stop and the prism, for forming a telecentric entrance pupil?

A. Yes, it does.

(Tr. at 594-595 (emphasis added).) Thus, McWilliams confirmed the focal length of the first lens unit and concluded that said lens unit was used for forming a telecentric entrance pupil as in element c) of claim 1 of the '993 patent. Respondents have not cited to any evidence in the record to rebut the opinion of McWilliams regarding said first lens unit of the ID500 device. Based on the foregoing, the administrative law judge finds that complainant has shown by a preponderance of the evidence that the ID500 includes a first lens unit according to element c) of claim 10 of the '993 patent.

Regarding element e) of claim 10 of the '993 patent, which requires "a third lens unit for correcting the field curvature of the image contributed by the first and second lens units," complainant's expert McWilliams testified:

Q. And with respect to the drawings, on the left is an excerpt from CX-230C, and on right again another picture from JPX-43.

Let's go to the third lens unit.

A. The third lens unit is shown in blue on that drawing, CDX-1C.131. And on CDX-1C.132 I show a photograph identifying it by the red arrow on the left. And you can see the properties of the geometry as shown in the Cross Match drawing on the right.

Q. For the record, the drawing is 233C.

Professor, is it your opinion that based on the elements you have identified in the ID-500, that each and every limitation of claim 10 is met by that product?

A. Yes, it is.

(Tr. at 595-596 (emphasis added).) Thus, McWilliams identified a third lens element in the ID500 and the properties of said third lens element and concluded that the ID500 meets every element of claim 10 of the '993 patent. Respondents have not cited to any evidence in the record to rebut the opinion of McWilliams regarding said third lens unit. Based on the foregoing, the administrative law judge finds that complainant has shown by a preponderance of the evidence that the ID500 includes a third lens unit according to element e) of claim 10 of the '993 patent.

Based on the foregoing, the administrative law judge finds that complainant has established by a preponderance of the evidence that the ID500 practices every element of claim 10 of the '993 patent, and thus, that complainant has satisfied the technical prong of the domestic industry requirement with respect to the '993 patent.

B. The '344 Patent

Complainant argued that Guardian and SEEK devices utilizing the L SCAN Essentials and Fast SDK software practice claims 1, 7, 41, and 45 of the '344 patent. (CBr at 229-238.)

Respondents argued that complainant did not present evidence to show that the domestic industry products practiced any element of claims 1, 7, 41, or 45 of the '344 patent. (RBr at 232-236.) Respondents also argued that complainant "has not provided any evidence that any customers utilize the sample code provided with" the L SCAN Essentials SDK, and that complainant's expert McWilliams' testimony is incomplete because it was "limited to identifying the function and asserting his conclusion that it performs a certain task." (RBr at 231.)

The staff argued that complainant has shown by a preponderance of the evidence that complainant practices one or more claims of the '344 patent. (SBr 67-68.)

Regarding the '344 patent, complainant's expert McWilliams testified that software operating on complainant's L Scan Guardian and SEEK devices practices at least one claim of this patent:

Q. Let's turn to CDX-1C.401. Professor, do you have an opinion as to whether the Cross Match L Scan Guardian and SEEK when operated with L Scan Essentials practice any claim of the '344 patent?

A. Yes. These devices practice the claims of the '344 patent.

* * *

Q. What primarily did you rely on in reaching your conclusions?

A. I looked at the source code operating on the devices as shown on the next slide.

* * *

Q. Thank you, Professor.

Did you just focus on one version of this software?

A. I focused on one version, but I understand that there are variations on this that also do the same L Scan Essentials functions.

Q. What about with respect to certain functions, did you rely on specific functions?

A. On the next slide I show that I used this integration sample, for example.

Q. For the record, which is CDX-1C.404.

A. So I used the integration sample and I understand that these function calls with the same names in other versions of L Scan Essentials occurs as well.

Q. What is integration sample, Professor?

A. That's a program you can run to operate the devices and use the software.

(Tr. at 847-849 (emphasis added).) Regarding the preamble of claim 1 of the '344 patent, which states "a method for capturing and quality classifying fingerprint images," McWilliams testified:

{

}

(Tr. at 849.) Regarding element (a) of claim 1, which requires "scanning a plurality of fingers substantially simultaneously," McWilliams testified:

Q. What about with respect to limitation A of the '344 patent, do you have an opinion as to whether that is met by the domestic industry products practicing L Scan Essentials, again, the L Scan Guardian and SEEK?

A. Yes, I found the domestic industry practicing claim 1A, using the software in the way I show in the next slides.

Q. Turn to CDX-1C.408.

{

}

Q. Please turn to CDX-1C.409.

{

}

(Tr. at 850 (emphasis added).) Regarding element (b) of claim 1, which requires "capturing data representing a combined image of a corresponding plurality of fingerprints," McWilliams testified:

A. Capturing data representing a combined image is practiced by the products as shown in the next couple of slides where the software does this.

Q. Let's please turn to the next slide, CDX-1C.411.

{

}

Q. For the record, that's CDX-1C.412.

{

}

(Tr. at 851 (emphasis added).) Regarding element (c) of claim 1 of the '344 patent, which requires "using concentrations of black pixels arranged in oval-like shapes in the combined image to determine individual fingerprint areas and shapes," McWilliams testified:

A. This is using concentrations of black pixels in the combined image to determine individual fingerprint areas and shapes, and that is practiced in the software as I show in the next slides.

Q. Let's turn to CDX-1C.414.

{

}

Q. For the record now we have moved to CDX-1C.415.

{

}

Q. For the record, we're at CDX-1C.416.

{

}

(Tr. at 852-853 (emphasis added).) Regarding element (d) of claim 1 of the '344 patent, which requires "separating the combined image into individual fingerprint images," McWilliams testified:

Q. Let's please turn to the next limitation of the '344 patent, CDX-1C.417.

Do you have an opinion as to whether the domestic industry products meet this limitation D of the '344 patent, claim 1?

A. Yes. The routines I am describing, separate the combined image into individual fingerprint images, if I can highlight where in the code, and the reasoning in the following slides.

Q. The next slide is CDX-1C.418.

{

}

Q. For the record this is CDX-1C.419.

{

}

(Tr. at 853-854 (emphasis added).) Regarding element (e) of claim 1, which requires "comparing each of the separated individual fingerprint images to a corresponding previously captured acceptable fingerprint image," McWilliams testified:

A. Yes, the domestic industry products compare each of the separated fingerprint images to a corresponding previously captured acceptable image.

Q. And what did you rely on for that, Professor, to reach that

conclusion?

A. The reasoning for that can be found in the source code, which I show on the next pages.

Q. Please turn to CDX-1C.421.

{

}

Q. For the record this is CDX-1C.422.

{

}

(Tr. at 854-855 (emphasis added).) Regarding element (f) of claim 1 of the '344 patent, which requires "quality classifying the separated individual fingerprint images as being either acceptable, possibly acceptable, or unacceptable according to the comparing step (e)," McWilliams testified:

A. Yes, there is quality classifying of the separated images into levels of acceptable, possibly acceptable or unacceptable, according to the reasoning shown in the next slides about the software.

Q. Please turn to the next slide, CDX-1C.424.

{

}

Q. Next slide is CDX-1C.425.

{

}

{ }

{

}

{

}

Q. For the record, now we're at CDX-1C.426.

{

}

{

}

(Tr. at 855-857 (emphasis added).) Regarding element (g) of claim 1 of the '344 patent, which requires "indicating the quality classification of each of the individual fingerprint images based on the quality classifying step (f)," McWilliams testified:

A. Yes, there is an indication of the quality classification of each of the prints. It is shown in the -- the support for it is shown looking at the software as I outline on the next pages.

Q. Let's please turn to CDX-1C.429.

{

}

On the visual display, there is a screen shot shown on this slide which has a highlighted yellow area where the quality will be displayed.

On the next slide --

Q. For the record this is CDX-1C.430.

{

}

{

}

Q. For the record, this is CDX-1C.431.

{

}

(Tr. at 857-859 (emphasis added).) Regarding element (h) of claim 1, which requires "determining whether the processed combined image is of a good quality," McWilliams testified:

A. Yes. They practice determining whether the processed combined image is of good quality.

Q. How do they do that, Professor?

A. That is done in the following -- in the software.

Q. What software, in particular?

{

}

Q. For the record this is CDX-1C.433.

A. The next slide shows the software call.

Q. This is CDX-1C.434.

{

}

(Tr. at 859-860 (emphasis added).) Thus, McWilliams testified that every element of claim 1 of the '344 patent is practiced by the Cross Match L Scan Guardian and SEEK when operated with the L Scan Essentials software. Respondents have not cited to any evidence in the record to rebut the opinions of McWilliams regarding claim 1 of the '344 patent with respect to the technical prong of the domestic industry requirement. Based on the foregoing, the administrative law judge finds that complainant has established, by a preponderance of the evidence, that the domestic industry products practice at least one claim of the '344 patent, and thus, he further finds the technical prong of the domestic industry requirement has been satisfied with respect to the '344 patent.

C. The '562 Patent

Complainant argued that Guardian and SEEK devices utilizing the L SCAN Essentials and Fast SDK software practice claims of the '562 patent including claims 1, 7, 12 and 30. (CBr at 220-228.)

Respondents argued that complainant did not present evidence to show that the domestic industry products practice any element of the asserted claims of the '562 patent. (RBr at 236-240.)

The staff argued that complainant has shown by a preponderance of the evidence that complainant practices one or more claims of the '562 patent. (SBr 68-69.)

Regarding the '562 patent, complainant's expert McWilliams testified that the domestic industry products practice claims 1, 7, 12, and 30 of this patent:

> Q. CDX-1C.236, please. Professor McWilliams, we're going to turn to the Cross Match Technologies' domestic industry products.
>
> Can you please explain what you have on this slide?
>
> A. Again, but for the Cross Match Technologies, there is the L Scan Guardian and the SEEK units. I examined these units by running them and then examined source code software associated with this operation as well.
>
> Q. And let's go to CDX-1C.237. Are these the claims from the '562 patent, claim 1, claim 7, claim 12, and claim 30 that you concluded practice -- are practiced by these products, the L Scan Guardian and the SEEK?
>
> A. Yes.

(Tr. at 676-677 (emphasis added).) Regarding the preamble of claim 1of the '562 patent, which states "a method for reliably capturing print images," McWilliams testified:

> Q. Let's turn to CDX-1C.240 where you have highlighted the preamble of claim 1 of the '562 patent. And I am going to move to CDX-1C.241. Again, you have got the preamble at the top of your slide and some source code below.
>
> In support, can you please explain what you have on this slide, Professor?
>
> {
>
> }

(Tr. at 680 (emphasis added.) Regarding element (a) of claim 1 of the '562 patent, which requires "initiating camera operation within a scanner," McWilliams testified:

> Let's go to CDX-1C.242, highlighted the second element here, initiating camera operation with the scanner. I am going to

move to CDX-1C.243.

Under this limitation can you please explain what you have identified here in support?

{

}

Q. Turning to the source code, CDX-1C.244, same limitation, up at the top, initiating a camera operation with the scanner.

Go ahead, Professor.

{

}

(Tr. at 680-681 (emphasis added).) Regarding element (b) of claim 1 of the '562 patent, which requires "scanning a biometric object to obtain a scanned image," McWilliams testified:

Turning to CDX-1C.245, let's move to limitation B of the '562 patent. And then to CDX-1C.246, with the source code you have identified here. Please explain this source code.

{

}

(Tr. at 681-682.) Regarding element (c) of claim 1 of the '562 patent, which requires "processing the scanned image," McWilliams testified:

Q. Thank you. The next limitation is in CDX-1C.247, limitation C. And at CDX-1C.248, you have got some explanations.

{

}

Q. Thank you, Professor. Turning to the source code at CDX-1C.249 for this limitation C.

{

}

Q. For the record you now moved to CDX-1C.250. Go ahead, Professor.

{

}

(Tr. at 682-683 (emphasis added).) With respect to element (d) of claim 1 of the '562 patent, which requires "determining print quality of individual print images in the scanned image," McWilliams testified:

> Let's turn to the next limitation, D, highlighted on CDX-1C.251, determining print quality of individual print images in the scanned image, and now move to CDX-1C.252 for this limitation.
>
> {
>
> }
>
> { }determination also does image size, contrast, but as well location of the print images.
>
> Q. Thank you, Professor.
>
> Let's turn to the source code starting at CDX-1C.253 for this limitation.
>
> {
>
> }

{

}

And then back in the process image the function CheckResults is called.

Q. Let me tell you, you have moved to CDX-1C.254. Please continue your testimony.

{

}

(Tr. at 683-684 (emphasis added).) Regarding element (e) of claim 1, which requires "detecting prints in the scanned image," McWilliams testified:

Q. Thank you. This is CDX-1C.255. The next limitation, E, detecting prints in the scanned image. Let's go to CDX-1C.256 for this limitation.

Go ahead, Professor.

{

}

Q. Thank you. Let's turn to the source code starting at CDX-1C.257 for this limitation E.

{

}

(Tr. at 684-685 (emphasis added).) Regarding element (f) of claim 1 of the '562 patent, which

requires "determining whether the scanned image is ready for capture based on an expected number of prints detected in step (e) and the quality of the print images determined in step (d)," McWilliams testified:

> Turning to CDX-1C.258, the last limitation, limitation F of claim 1, let's go to CDX-1C.259 for this limitation. Go ahead, Professor.
>
> {
>
> }
>
> Q. Thank you, Professor.
>
> Let's turn to the source code again at CDX-1C.260 for step F.
>
> {
>
> }
>
> Q. Thank you, Professor.
>
> Let's move to CDX-1C.261 in this series. Go ahead.
>
> {
>
> }
>
> Then the scanned image is ready for capture if and only if both of those conditions are met.

{

}

(Tr. at 685-687 (emphasis added).) Thus, McWilliams testified that every element of claim 1 of the '562 patent is practiced by the Cross Match L Scan Guardian and SEEK when operated with the L Scan Essentials software. Respondents have not cited to any evidence in the record to rebut the opinions of McWilliams regarding claim 1 of the '562 patent with respect to the technical prong of the domestic industry requirement. Based on the foregoing, the administrative law judge finds that complainant has established, by a preponderance of the evidence, that the domestic industry products practice at least one claim of the '562 patent, and thus, he further finds the technical prong of the domestic industry requirement has been satisfied with respect to the '562 patent.

XII. Remedy

Complainant argued that a limited exclusion order directed against all infringing devices and software is appropriate under section 337(d)(1); and that as it relates to the importation of infringing software, such an exclusion order must extend not only to the importation of software on fixed media (such as disks, CD-ROMs, magnetic memory, and semiconductor devices) but also to the electronic transmission of infringing software by means of, for example, the internet, email, or other telephonic or electronic media. (CBr at 241.)

As for any cease and desist order, complainant argued that respondents admit that at least sixteen (16) units of accused Suprema products are held in inventory by Mentalix in the United States; that Mentalix's current inventory may hold a commercially significant value as high as $196,680.16; that a cease and desist order must include a prohibition against the electronic

transmission of the infringing software so as to prevent respondents Suprema and Mentalix from simply transmitting the software electronically to a U.S. customer, who could then copy it onto a diskette or other tangible medium for use with an infringing system; and that the Commission's cease and desist order should extend to respondent Suprema as well as its U.S.-based distributor Mentalix. (CBr at 243.)

Respondents argued that the only appropriate form of relief against Suprema would be a limited exclusion order without bond and directed solely to further importation of specific products found to be infringing; and that no exclusion order can issue against Mentalix's accused software product FedSubmit because the product is developed entirely domestically. (RBr at 242, 244.) As for any cease and desist order, it was argued that complainant has made no showing of a commercially significant inventory of the accused products in the United States by either Mentalix or Suprema. (RBr at 245.)

The staff argued that, in the event the Commission finds a violation, a limited exclusion order without the additional provisions requested by the private parties but with a certification provision for complainant with respect to the '993 patent would be the proper remedy. (SBr at 88, 91.) As for any cease and desist order, the staff argued that the evidence supports issuance of a cease and desist order to domestic respondent Mentalix, but not to foreign respondent Suprema.

The Commission has broad discretion in selecting the form, scope, and extent of a remedy in Section 337 proceedings. Certain Integrated Circuit Telecommunication Chips, Inv. No. 337-TA-337, Comm'n Op. at 21 (August 3, 1993). Pursuant to its statutory authority found at 19 U.S.C. § 1337 (d), the Commission may exclude from importation goods and products that form the basis for a finding of a violation of Section 337 which includes products that have been

found to infringe the patents-in-issue directly, contributorily or by inducement after importation has occurred. 19 U.S.C. § 1337(d); Certain Flash Memory Circuits, Inv. No. 337-TA-382, Comm'n Op. at 26 (June 26, 1997) ("The Commission has the authority to enter an exclusion order, a cease and desist order, or both.") Indeed, absent special circumstances, the statute requires such exclusion:

> If the Commission determines ... that there is a violation of this section, it shall direct that the articles concerned ...be excluded from entry into the United States, unless, after considering 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, it finds that such articles should not be excluded from entry.

19 U.S.C. § 1337(d). Hence, a remedy excluding respondents infringing products from entry is mandatory if a violation of Section 337 is found, unless the Commission finds that public interest factors militate against such remedy.

Section 337(f) also permits the Commission to issue, in lieu of, or in addition to, an exclusion order, a cease and desist order directing persons found to have violated Section 337 to cease and desist from engaging in the unfair methods or acts involved. 19 U.S.C. § 1337(f). Cease and desist orders are warranted with respect to respondents that maintain commercially significant U.S. inventories of the infringing product. See, e.g., Certain Crystalline Cefadroxil Monohydrate, Inv. No. 337-TA-293, USITC Pub. 2391 at 37-42 (June 1991). The Commission has the authority to issue cease and desist orders where a respondent has a sufficient inventory of infringing goods in the United States. Certain NAND Flash Memory Circuits, Inv. No. 337-TA-526, 2005 ITC Lexis 859, Init. Determ. at *255 (Oct. 19, 2005) (citing Certain Plastic Encapsulated Integrated Circuits, Inv. No. 337-TA-315, U.S.I.T.C. Pub. No. 2574, Comm'n Op.

at 37 (November 1992)).

Cease and desist orders are directed at a specific respondent in order to prevent the sale, distribution and other use of products that have already been imported into the United States prior to the entry and implementation of any exclusion order. Certain Curable Fluoroelastomer Compositions, Inv. No. 337-TA-364, Notice of Issuance of Limited Exclusion Order and Cease and Desist Order, 1995 WL 1049682 (Mar. 16, 1995). Cease and desist orders can preclude any activity "reasonably related to the importation of infringing products." Certain Hardware Logic Emulation Systems, Inv. No. 337-TA-383, Comm'n. Op. on Remedy, the Public Interest, and Bonding, 1998 WL 307240 (Feb. 28, 1998). Typical cease and desist orders enjoin a respondent from selling, marketing, distributing and advertising its infringing products, as well as any solicitation of U.S. agents and distributors for the purpose of selling, marketing, distributing, and advertising infringing products. See Certain Electrical Connectors and Products Containing Same, Inv. No. 337-TA-374, Comm'n Cease and Desist Order, 1996 WL 1056313 (May 3, 1996).

In the event a violation is found, the administrative law judge recommends the issuance of a limited exclusion order prohibiting the importation into the United States of infringing articles, regardless of brand name, "that are manufactured abroad or imported by or on behalf of [the respondents], or any of its affiliated companies, parents, subsidiaries, or other related business entities, or their successors or assigns." Moreover, he recommends that said order should not be limited to specifically-identified products, but rather extend to all infringing products. However as to any infringing software, he recommends any exclusion order extend only to the importation of software on fixed media.

The administrative law judge finds that the additional provisions in the exclusion order requested by the private parties are contrary to Commission precedent. Thus complainants' argument that any exclusion order should direct Customs to block the electronic transmission of software into the United States has been considered by the Commission in previous investigations and has been rejected as impractical. See, e.g., Hardware Logic, Commission Opinion at 19-20 (refusing to bar electronic transmissions out of deference to Customs); Certain Systems for Detecting and Removing Viruses or Worms, Components Thereof, and Products Containing the Same, Inv. No. 337-TA-510 Commission Opinion at 4-5 (Aug. 8, 2005) ("Viruses or Worms") (same). Similarly, respondents' argument that the exclusion order should be limited to specific products has also been repeatedly considered and rejected by the Commission. See, e.g., Certain Integrated Repeaters, Switches, Transceivers and Products Containing Same, Inv. No. 337-TA-435, Commission Opinion at 22-23, USITC Pub. 3547 (Oct. 2002); Certain Laser Bar Code Scanners and Scan Engines, Components Thereof, and Products Containing Same, Inv. No. 337-TA-551, Commission Opinion at 23, USITC Pub. 4006 (May 2008) ("Laser Bar Code Scanners").

However, if a violation of Section 337 is found with respect to the '993 patent, the administrative law judge recommends issuance of an exclusion order that contains a reporting requirement for complainant. {

} Hence the administrative law judge believes that complainant should be required to periodically certify that it is continuing to

exploit the '993 patent. See, e.g., Certain Variable Speed Wind Turbines and Components Thereof, Inv. No. 337-TA-376, Commission Opinion at 18, USITC Pub. 3003 (Nov. 1996); Certain Wire Electrical Discharge Machining Apparatus and Components Thereof, Inv. No. 337-TA-290, Commission Opinion at 20 (March 16, 1990); Certain Caulking Guns, Inv. No. 337-TA-139, Commission Opinion at 3, USITC Pub. 1507 (March 1984).

With respect to issuance of any cease and desist order, if a violation is found the administrative law judge recommends issuance of a cease and desist order to domestic respondent Mentalix. {

}

XIII. Bond

Complainant initially argued that the price differential between products is 179% and that the appropriate level of bond is therefore at least 100% during the Presidential review period. (CBr at 244-48.) However it later argued that a bond of 179% should be set. (CRBr at 169.)

Respondents argued that no bond should be required because complainant has failed to present sufficient evidence, despite evidence being available to it. (RRBr at 203.)

The staff argued that if an exclusion order or cease and desist order is issued, then the appropriate Presidential review period bond be in the amount of 100% of entered value. (SRBr at 56.)

Section 337(j)(3) provides for the entry of infringing articles upon the payment of a bond during the sixty-day Presidential review period. 19 U.S.C. § 1337(j)(3). Any bond is to be set at a level sufficient to "offset any competitive advantage resulting from the unfair method of

competition or unfair act enjoyed by persons benefiting from the importation." Certain Dynamic Random Access Memories, Components Thereof and Products Containing Same, Inv. No. 337-TA-242, Commission Opinion on Violation, Remedy, Bonding and the Public Interest, USITC Pub. No. 2034, 1987 WL 450856 (U.S.I.T.C.) at 38 (1987). When reliable price information is available, the Commission has set a bond by eliminating the price differential between the domestic and the imported infringing product. Certain Digital Satellite System (DSS) Receivers and Components Thereof, Inv. No. 337-TA-392, Final Initial and Recommended Determination on Remedy and Bonding, U.S.I.T.C. Pub. No. 3418, 2001 WL 535427 (U.S.I.T.C.) at 336 (April 2001). Further, the price differential may be based on a weighted average that reliably reflects the range of prices for sales and the volume of sales at each price for each product, and a bond greater than 100% may be set to completely offset any competitive advantage. Certain Two-Handle Centerset Faucets and Escutcheons, and Components Thereof, Inv. No. 337-TA-422, Commission Opinion at 9-11 (July 21, 2000) (setting a bond of 264% based on a weighted average and finding pricing information "reliable because it is supplied by [respondent] and it is accepted by [complainant] and the [staff] as well"). Where reliable price information is not available, Commission precedent establishes that the bond should be set at 100%. Certain Semiconductor Memory Devices and Products Containing Same, Inv. No. 337-TA-414, Recommended Determination on Remedy and Bonding, 1999 WL 1267282 (U.S.I.T.C.) at 6 (December 13, 1999) (Semiconductor Memory Devices); see also Certain Digital Multimeters, and Products With Multimeter Functionality, Inv. No. 337-TA-588, Commission Opinion at 12-13 (June 3, 2008) (setting a bond of 100% where pricing information was unclear and price comparisons would be complicated and difficult) (Digital

Multimeters). On the other hand, if a complainant fails to provide evidence concerning the appropriate bond, then the Commission may decline to impose any bond. See, e.g., Certain Silicon Microphone Packages and Products Containing Same, Inv. No. 337-TA-629, Commission Opinion at 20 (Aug. 21, 2009).

Complainant argued that a bond of 179% should be set so as to be sufficient to protect complainant from injury. (CRBr at 169.) Complainant's request for a bond of 179% uses a weighted average based on actual sales of only one product of complainant, viz. the Cross Match Guardian, and only one accused product, viz. the RealScan-10. (CBr at 246-247.) However, complainant's domestic industry products include at least the Guardian, SEEK, and ID500 products, and the accused products include Suprema's RealScan-10/10F, RealScan-D/DF, RealScan-F, RealScan-G2 and RealScan-G10 scanners, as well as Suprema's RealScan Basic and Extended SDK software, and Mentalix's Fed Submit software. See supra. The most recent "list" price for complainant's Guardian product (with auto capture and finger rolls) is { .} (CX-517C, at 1.) The most recent "list" price for complainant's SEEK product is { } (Id. at 23). The ID500, when sold as a bundled system, has a price of { } (CX-597C.) {

} {

} Based on the foregoing, the administrative law judge finds that the exact pricing information for said products is unclear and determining a meaningful price differential would be complicated and difficult. See Digital Multimeters, Comm'n Op. at 12-13. Thus, the administrative law judge recommends that the appropriate Presidential review period

bond should be 100% of entered value, based on Commission precedent. See Semiconductor Memory Devices.

XIV. Additional Findings

1. Complainant Cross Match Technologies, Inc. (CMT) is a Delaware corporation having a principal place of business in Palm Beach Gardens, Florida. (SFF 1 (undisputed).)

2. CMT is in the business of manufacturing, servicing, and supplying livescan products, document readers, and software solutions, among other things. ((SFF 2 (undisputed).)

3. CMT's livescan products include fingerprint scanners, as well as software or other accessories and services to implement that solution. (SFF 3 (undisputed).)

4. Respondent Suprema, Inc. (Suprema) is a Korean corporation located in Gyeonggi, Korea. (SFF 4 (undisputed).)

5. Suprema is engaged in making various types of biometric devices, including livescan devices, and related software. (SFF 5 (undisputed).)

6. Respondent Mentalix, Inc. (Mentalix) is a Texas corporation, with a principal place of business in Plano, Texas. (SFF 6 (undisputed).)

7. Mentalix sells identity management systems, including livescan devices, for capturing fingerprints, palm prints, mug shots, and demographic data. (SFF 7 (undisputed).)

CONCLUSIONS OF LAW

1. The Commission has in personam, in rem and subject matter jurisdiction.

2. There has been an importation of accused biometric scanning devices, components thereof, associated software and products containing the same into the United States which are the subject of the unfair trade allegations.

3. It has not been established that the asserted claims of any of the '993, '344, or '562 patents are invalid.

4. Complainant has established that the RealScan-10 and RealScan-10F accused products infringe asserted claims 10, 12, and 15 of the '993 patent.

5. Complainant has not established that any accused products infringe asserted claims 11, 17, or 18 of the '993 patent.

6. Complainant has not established that asserted claims of the '562 patent are infringed by any of the accused products.

7. Complainant has established that asserted claim 19 of the '344 patent is infringed by the RealScan-10, RealScan-10F, RealScan-D, and RealScan-DF accused products, when used with Mentalix' Fed Submit software.

8. Complainant has not established that asserted claims 1, 7, 41, 42, 43, and 45 of the '344 patent are infringed by any of the accused products.

9. Complainant has established a domestic industry.

10. The evidence establishes that there is a violation of section 337.

11. In the event a violation of section 337 is found, a limited exclusion order and an appropriate cease and desist order are recommended. Also a bond of 100% of entered

value during the Presidential Review period is recommended.

ORDER

Based on the foregoing, and the record as a whole, it is the administrative law judge's Final Initial Determination that there is a violation of section 337 in the importation into the United States, sale for importation, and sale within the United States after importation of certain biometric scanning devices, components thereof, associated software and products containing the same. It is also the administrative law judge's recommendation, should a violation be found, that a limited exclusion order issue barring entry into the United States of infringing biometric scanning devices, components thereof, associated software and products containing the same and that an appropriate cease and desist order should also issue. The administrative law judge further recommends a bond of 100% of entered value during Presidential review period should a violation be found.

The administrative law judge hereby CERTIFIES to the Commission his Final Initial and Recommended Determinations. The briefs of the parties, filed with the Secretary, are not certified, since they are already in the Commission's possession in accordance with Commission rules.

Further it is ORDERED that:

1. In accordance with Commission rule 210.39, all material heretofore marked in camera because of business, financial and marketing data found by the administrative law judge to be cognizable as confidential business information under Commission rule 201.6(a), is to be given in camera treatment continuing after the date this investigation is terminated.

2. Counsel for the parties shall have in the hands of the administrative law judge those portions of the final initial and recommended determinations which contain bracketed confidential business information to be deleted from any public version of said determinations, no later than June 30, 2011. Any such bracketed version shall not be served via facsimile on the administrative law judge. If no such bracketed version is received from a party, it will mean that the party has no objection to removing the confidential status, in its entirety, from these initial and recommended determinations.

3. The initial determination portion of the Final Initial and Recommended Determinations, issued pursuant to Commission rules 210.42(a) and 210.42-46, shall become the determination of the Commission, unless the Commission, shall have ordered its review of certain issues therein or by order has changed the effective date of the initial determination portion. The recommended determination portion, issued pursuant to Commission rule 210.42(a)(1)(ii), will be considered by the Commission in reaching a determination on remedy pursuant to Commission rule 210.50(a).

Paul J. Luckern
Chief Administrative Law Judge

Issued: June 17, 2011

CERTAIN BIOMETRIC SCANNING DEVICES, COMPONENTS THEREOF, ASSOCIATED SOFTWARE, AND PRODUCTS CONTAINING THE SAME **337-TA-720**

CERTIFICATE OF SERVICE

I, James R. Holbein, hereby certify that the attached **Public Version Final Initial and Recommended Determinations** has been served by hand upon the Commission Investigative Attorney, David O. Lloyd, Esq., and the following parties as indicated, on July 18, 2011.

James R. Holbein, Secretary
U.S. International Trade Commission
500 E Street, SW
Washington, DC 20436

On Behalf of Complainant Cross Match Technologies, Inc.:

Maximilian A. Grant, Esq.
Latham & Watkins LLP
555 11th Street, NW, Suite 1000
Washington, DC 20004
P-202-637-2200
F-202-637-2201

( ) Via Hand Delivery
(X) Via Overnight Mail
( ) Via First Class Mail
( ) Other: _____

Respondents Suprema, Inc. and Mentalix, Inc.:

V. James Adduci, II.
Adduci, Mastriani & Schaumberg, L.L.P.
1200 Seventeenth Street, NW, Fifth Floor
Washington, DC 20036
P-202-467-6300
F-202-466-2006

( ) Via Hand Delivery
(X) Via Overnight Mail
( ) Via First Class Mail
( ) Other: _____