UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

2012-1170

SUPREMA, INC. and MENTALIX, INC.,

Appellants,

v.

INTERNATIONAL TRADE COMMISSION,

Appellee,

and

CROSS MATCH TECHNOLOGIES, INC.,

Intervenor.

On Appeal from the United States International Trade Commission in Investigation No. 337-TA-720

[CORRECTED] APPELLANTS' NON-CONFIDENTIAL OPENING EN BANC BRIEF

Darryl M. Woo
Jae Won Song
Ilana S. Rubel
Bryan A. Kohm
David M. Lacy Kusters
Bradley T. Meissner
FENWICK & WEST LLP
555 California St., 12th Floor
San Francisco, CA 94104
Telephone: (415) 875-2300
Facsimile: (415) 281-1350

Attorneys for Respondents-Appellants SUPREMA, INC. and MENTALIX, INC.

CERTIFICATE OF INTEREST

Counsel for the Appellants, Suprema, Inc. and Mentalix, Inc., certifies the following:

1. The full name of every party or amicus represented by me is:

   Suprema, Inc.
   Mentalix, Inc.

2. The name of the real party in interest (if the party named in the caption is not the real party in interest) represented by me is:

   As indicated in item 1.

3. All parent corporations and any publicly held companies that own 10 percent or more of the stock of the party or amicus curiae represented by me are:

   None.

4. The names of all law firms and the partners or associates that appeared for the party or amicus now represented by me in the trial court or agency or are expected to appear in this court are:

Law Firm	Attorneys
Fenwick & West LLP	Darryl M. Woo Jae Won Song Ilana S. Rubel Bryan A. Kohm Bradley T. Meissner David M. Lacy Kusters Lauren E. Whittemore Ravi R. Ranganath
Formerly with Fenwick & West LLP	Heather N. Mewes Erin Simon Clifford Webb

Adduci, Mastriani & Schaumberg LLP	V. James Adduci, II Rowan E. Morris Munford Page Hall, II Jonathan J. Engler Daniel F. Smith

Dated: August 12, 2014

By: */s/ Darryl M. Woo*
Darryl M. Woo
Counsel for Respondents-Appellants

TABLE OF CONTENTS

Page

[NOTE: This brief contains information that has been determined to be confidential because it relates to the parties' non-public business practices; this information is subject to a protective order. As a result, certain portions of this brief have been designated as confidential. Pursuant to Rule 28(d)(1)(B) of this Court's Rules of Practice, those confidential portions have been removed from this non-confidential version of the brief.]

TABLE OF CONTENTS
(Continued)

Page

TABLE OF CONTENTS
(Continued)

Page

TABLE OF AUTHORITIES

Page(s)

CASES

TABLE OF AUTHORITIES
(Continued)

Pages(s)

TABLE OF AUTHORITIES
(Continued)

Pages(s)

TABLE OF AUTHORITIES
(Continued)

Pages(s)

TABLE OF ABBREVIATIONS

’344 patent	U.S. Patent No. 7,203,344 (asserted patent)
’562 patent	U.S. Patent No. 7,277,562 (asserted patent)
’993 patent	U.S. Patent No. 5,900,993 (asserted patent)
’344 patent application	U.S. Patent Application No. 10/345,420
’932 patent	U.S. Patent No. 6,483,932
CALJ	Chief Administrative Law Judge
Commission	U.S. International Trade Commission
Cross Match	Cross Match Technologies, Inc.
FID	Final Initial and Recommended Determinations (A000027–207)
Mentalix	Mentalix, Inc.
NIST	U.S. National Institute of Standards and Technology
section 271	35 U.S.C. § 271
section 337	19 U.S.C. § 1337(a)(1)(B)
SDK	Software Development Kit
Suprema	Suprema, Inc.

STATEMENT OF RELATED CASES

Pursuant to Federal Circuit Rule 47.5, Appellants Suprema, Inc. and Mentalix, Inc. (collectively, "Appellants") state that there are no other related appeals currently before the Court. There were two other related appeals previously before the Court: *Cross Match Technologies, Inc. v. Int'l Trade Commission*, Nos. 2012–1026 and –1124. These appeals, consolidated on January 31, 2012 [Dkt. No. 24], like the instant appeal, related to United States International Trade Commission Investigation No. 337-TA-720. Neither Cross Match nor the Commission sought en banc or further review with respect to these consolidated appeals. *See* Commission Pet. [Dkt. No. 88–1] (seeking en banc review of only Appeal No. 2012–1170).

Appellants further state that one other matter, currently pending before the United States District Court for the Eastern District of Texas, *Cross Match Technologies, Inc. v. Suprema, Inc., et al.*, No. 6:10-cv-28, will be directly affected by this Court's decision in the pending appeals. By order dated June 21, 2010, that matter was stayed pending the final outcome of the Investigation. *Cross Match Techs., Inc. v. Suprema, Inc.*, No. 6:10-cv-28, Dkt. No. 39.

JURISDICTIONAL STATEMENT

The CALJ made a final initial determination on June 17, 2011, which the Commission reviewed in part. On October 24, 2011, the Commission issued its Opinion, Limited Exclusion Order, Cease and Desist Order, and Termination of Investigation No. 337-TA-720. Appellants timely filed a petition for review on January 20, 2012. *See* 19 U.S.C. § 1337(c). This Court has jurisdiction to review final determinations of the Commission under 19 U.S.C. § 1337(c) and 28 U.S.C. § 1295(a)(6).

STATEMENT OF ISSUES[1]

1. Whether a violation of 19 U.S.C. § 1337(a)(1)(B)(i) for imported "articles that – infringe" may be found based on inducement of infringement where the only "article" imported or sold is a staple article capable of substantial non-infringing uses, and where the resulting direct infringement is of a method claim occurring, if at all, only domestically after importation.

2. Whether, as a matter of law, the Commission's finding of inducement of infringement of claim 19 of the '344 patent was proper where Suprema lacked knowledge of the '344 patent but was determined to be "willfully blind" because it failed to read the '562 patent in its entirety, which mentioned the '344 patent application in the specification, and elected not to seek an opinion of counsel as to that patent, after properly concluding that the '562 patent did not apply to Suprema's products; where Cross Match did not mark its products with the numbers of the patents-in-suit; and where the alleged acts of specific intent were the same basic sales and customer support efforts performed with all customers, including those found not to infringe the '344 patent.

[1] The order granting rehearing en banc issued in response to a petition focusing on the scope of section 337, and Appellants thus focus this brief on those issues. Because the order vacated the Panel opinion in its entirety, however, Appellants have also addressed certain other issues they believe would benefit from additional briefing.

3. Whether claim 19 of the ’344 patent is infringed when construed according to its ordinary meaning to require both area detection based on a concentration of black pixels, and shape detection based on an arrangement of the concentrated black pixels, and where the accused product combination merely draws bounding boxes using neither basis and is incapable of detecting area or shape to determine whether the detected area and shape are of an acceptable quality.

4. Whether the claims of the ’993 patent should be construed to cover lens systems including non-lens elements and off-axis optics, despite statements in the specification, including the Description of the Invention, that the lens systems “do not employ” them.*

5. Whether the claimed invention of the ’993 patent is obvious and therefore the patent invalid as a matter of law because it is merely the predictable combination of a triplet lens known for its distortion-correcting properties and a known optical arrangement for fingerprint scanners.*

** Refers to issues addressed in prior briefing but not in the instant en banc brief.*

STATEMENT OF THE CASE

A.! The Commission Investigation and Opinion Below

This appeal arises from an investigation by the Commission based on a complaint filed by Cross Match. Cross Match alleged that Texas-based fingerprint systems provider Mentalix, and Korean hardware manufacturer Suprema, each violated section 337 by infringing Cross Match's '562, '344 and '993 patents.[2] The '562 and '344 patents relate to particular implementations of fingerprint image capturing and processing. The '993 patent concerns an optical system employing a particular configuration of lens elements. Suprema imports its fingerprint scanning devices and SDKs—a library of code for customers to use in creating software necessary to make the scanners operable—to several customers in the United States, including Mentalix. (A200398; A200312–313; A200391; A000227–230.)[3] Using Suprema's SDK, Mentalix adapted its domestically-created software for use with certain Suprema scanners. (A200312–313.) Cross Match accused this combination, as well as Suprema's SDK alone, of infringement. Cross Match also

[2] Cross Match initially asserted U.S. Patent No. 6,483,932, but later withdrew such claims and, at its request, the Commission terminated its investigation as to the '932 patent. (A000037.)

[3] A software developer's kit ("SDK") is a set of tools that enables software developers to write software. (A200273–274, 916:25–918:14.) The SDK itself is not an executable program—it cannot run on a computer like an application such as Microsoft Word. (*Id.*)

accused certain of Suprema's scanners combined with domestically developed software created by three other scanner customers. (*See* A103001–002.)

After an evidentiary hearing, the CALJ found no infringement of the '562 patent. (A000118–119; A000024.) Cross Match also asserted claims 1, 7, 41, 42, 43, and 45 of the '344 patent, but the CALJ found no infringement of those by any accused product. (A000120–123; A000133–134; A000024.)

The CALJ did, however, find infringement of claim 19 of the '344 patent by the combination of Suprema's scanners and SDK with the "segmentation" feature of Mentalix's FedSubmit software—a feature developed by Mentalix entirely within the United States (Mentalix conducts all operations domestically), using software supplied free to the public by the U.S. Government through NIST, the National Institute of Standards and Technology. (A000120–133; A200311; A200313–314.) The CALJ found no infringement of any '344 patent claim, including claim 19, by other third party software making use of Suprema's SDK. (A000120–123; A000133–134; A000024.)

The CALJ found that Suprema's RealScan-10 and RealScan-10F scanners infringe the '993 patent, but that three other scanner models did not infringe that patent. (A000102–115.)

Upon review, the Commission adopted the CALJ's claim construction, his determinations of non-infringement and validity with respect to the '562 patent,

and his determinations of infringement and validity with respect to the ’993 patent. As to the sole determination of infringement of the ’344 patent, the Commission held that Suprema’s scanners and SDK did not, standing alone or when incorporated into third-party software, infringe claim 19. (A000024; A000220; A000229.) The Commission expressly found no contributory infringement because Suprema’s products are capable of substantial non-infringing uses—demonstrated by the three non-infringing customers who also use Suprema’s SDK to create software for use with Suprema’s scanners. (A000227–230, A000220.) Hence, for purposes of the ’344 patent, Suprema’s scanners and SDKs are staple articles of commerce suitable for substantial non-infringing use. (A000229.)

The Commission, however, concluded that Texas-based Mentalix directly infringed claim 19 by using its FedSubmit software with certain Suprema scanners; and that Suprema induced such infringement, despite having no actual knowledge of the ’344 patent. (A000211–212; A000220–227.) Instead, Suprema was found “willfully blind” to the ’344 patent because it failed to read a *different patent*, the ’562 patent, in its entirety, which specification mentions the application that led to the ’344 patent’s issuance. Despite uncontroverted evidence that Suprema had no reason to believe it infringed the ’562 patent—a conclusion consistent with the CALJ’s and Commission’s findings of non-infringement—the Commission charged Suprema with knowledge of the ’344 patent under the doctrine of willful

blindness. The Commission found that had Suprema obtained an opinion of counsel as to the non-infringed '562 patent, counsel would have found the '344 patent application and discovered that it had matured into an issued patent. (A000224.)

The Commission also based its willful blindness finding upon Suprema's act of obtaining Cross Match product samples, though Cross Match failed to mark *any* of its products with the '344 patent. (A302291–292.)

In light of its inducement finding, the Commission incorrectly found as moot Appellants' argument that section 337 is inapplicable because only staple articles were imported and the alleged infringement resulted from use of domestically-developed software. (A000232.) Two months later, the Commission overruled prior decisions, where, as here "the obsolete nexus language" was used, clarifying that "a showing of a nexus between imported articles and alleged acts of infringement will not substitute for proof that all of the statutory requirements found in section 337 have been satisfied." *Certain Electr. Devices with Image Processing Sys., Components Thereof, and Associated Software*, Inv. No. 337-TA-724, 2011 ITC LEXIS 2869, at *30–31 (Dec. 21, 2011).

This en banc brief focuses primarily on (i) the Commission's finding that Suprema's inducement of Mentalix's purported domestic infringement through its combination of staple article scanners with domestically-created software violated

19 U.S.C. § 1337(a)(1)(B); (ii) its finding that Suprema's unawareness of the '344 patent due to its failure to obtain an opinion of counsel as to the '562 patent and its acquisition of non-marked Cross Match products constituted "willful blindness"; and (iii) its finding of infringement based on its construction of elements (e) and (f) of claim 19 of the '344 patent. Appellants rely on their prior briefing with respect to the '993 patent.

B.! The Panel Opinion and En Banc Order

By Order dated December 13, 2013, a three-judge panel of this Court (the "Panel") reversed the Commission regarding infringement of the '344 patent and vacated its orders, holding that the Commission's authority reaches only "articles . . . that infringe" a U.S. patent at the time of importation, *i.e.*, only the importation of infringing articles. *Suprema, Inc. v. Int'l Trade Comm'n*, 742 F.3d 1350, 1357, 1368 (Fed. Cir. 2013). Because there can be no inducement of infringement absent a resulting act of direct infringement, the Panel reasoned, where any direct infringement occurs only after importation, there are no "articles . . . that infringe" at the time of importation. *Id.* at 1360–63. Thus, the Panel held, an exclusion order based on a violation of section 337(a)(1)(B)(i) may not be predicated on a theory of inducement where direct infringement occurs only post-importation. *Id.* at 1352.

The Panel first examined the statutory language of sections 337(a)(1)(B) and (d) of the Tariff Act, which together authorize the Commission to exclude infringing articles. *Id.* at 1358–59. The Panel explained that "[t]he focus" of section 337(a)(1)(B) "is on the infringing nature of the articles at the time of importation, not on the intent of the parties with respect to the imported goods," and that "[t]he same focus is evident also from the main remedy [the Commission] can grant, exclusion orders on the imported articles." *Id.* at 1358. Based on its examination of the *in rem* statutory language, the Panel concluded that "[e]xclusion orders based on violations of § 337(a)(1)(B)(i) thus pertain only to the imported goods and are necessarily based on the infringing nature of those goods when imported." *Id.* at 1359.

The Panel next considered the relationship between section 337 and 35 U.S.C. § 271, which defines patent infringement and provides the basis for a section 337(a)(1)(B) violation. *See id*. The Panel observed that while section 271 establishes three distinct bases for patent infringement liability, only two of those—direct infringement (section 271(a)), and contributory infringement (section 271(c))—are expressly defined by reference to an "article." *See id.* at 1360. The third—inducement of infringement (section 271(b))—is defined solely by reference to the inducer's alleged conduct. *See id.*

Based on that fundamental distinction, the Panel concluded that "the statutory grant of authority in § 337 cannot extend to the conduct proscribed in § 271(b) where the acts of underlying direct infringement occur post-importation." *Id.* at 1372. The Panel explained:

> The patent laws essentially define articles that infringe in § 271(a) and (c), and those provisions' standards for infringement . . . must be met at or before importation in order for the articles to be infringing when imported. Section 271(b) makes unlawful certain conduct (inducing infringement) that becomes tied to an article only through the underlying direct infringement. Prior to the commission of any direct infringement, for purposes of inducement of infringement, there are no "articles that . . . infringe"—a prerequisite to the Commission's exercise of authority based on § 337(a)(1)(B)(i). Consequently, we hold that the Commission lacked the authority to enter an exclusion order directed to Suprema's scanners premised on Suprema's purported induced infringement . . . .

Id. at 1360–61.

In so concluding, the Panel rejected Appellees'[4] arguments that this Court or the Commission had ever previously addressed or considered the issue at hand. *Id.* at 1362. The Panel also rejected the argument that the Commission's interpretation of section 337(a)(1)(B) was entitled to *Chevron* deference, finding that Congress's intent was clear from the statutory language. *See id.* 1363 & n.5.

[4] Although Cross Match is an Intervenor, and because its arguments are aligned with the Commission's in this appeal, the two will collectively be referred to herein as "Appellees."

Finally, the Panel's holding was limited to the specific question presented: whether inducement can establish a section 337(a)(1)(B) violation where direct infringement occurs only after importation. *See id.* at 1361–1362 & n.4. Significantly, the Panel did not hold that inducement can never support a violation of section 337(a)(1)(B). The Panel's decision also does not purport to affect the application of section 337 in cases of contributory infringement. *See id*. at 1360–61 & n.4. The Panel did not reach the issue of "willful blindness" or the proper construction of the'344 Patent, both of which supply alternative bases for overturning the Commission's orders. *See id.* at 1353, 1363.

Judge Reyna dissented from the Panel's opinion. In his view, despite section 337(a)(1)(B)'s statutory limitation to "articles . . . that infringe," the Commission may exclude articles "tied to conduct giving rise to infringement liability," even where, as here, the imported articles themselves (as expressly found by the Commission) are capable of substantial non-infringing uses (and, therefore, are staple articles) and the putative direct infringement only takes place in the U.S. after importation. *See id* at 1375.[5]

[5] Judge Reyna's dissent also stated that "the majority takes the unnecessary step of addressing the legality of the Commission's authority to conduct a Section 337 investigation that is based on allegations of induced infringement." *Id.* at 1372. The majority, however, expressly stated that its ruling did not affect the Commission's authority to initiate or conduct investigations; rather, it limited only its ability to find a violation based on inducement where the direct infringement takes place after importation. *Id.* at 1357 n.2.

The Court's May 13, 2014 Order granted the Petitions for Rehearing En Banc, denied the related Petitions for Panel Rehearing, and vacated the December 13, 2013 Panel Opinion. Dkt. No. 105 at 2. By Order dated June 11, 2014, the Court invited the parties to submit new en banc briefs, but noted that the appeal would also encompass the originally-filed briefs. Dkt. No. 106.

STATEMENT OF FACTS

A.! Fingerprint Scanning Technology

Fingerprints have been used for biometric identification since the nineteenth century. (A200392.) Before the advent of "livescan" technology, fingerprints were imaged by pressing an inked finger onto paper. (A200393; A200396–397.) In livescan, in common use since the 1990s, fingerprint scanners take digital images of fingerprints. (A200389; A200396–397; A200311.) The sensor converts the image into digital data, which may be post-processed in several ways. (A200397; A302940–947; A302952–A302955.)

One common processing feature is "segmentation," which means separating a picture containing multiple fingers—for example, when four fingers are placed on the platen at once—into individual fingerprint images. (A200313; A200288–289.) Another common feature, "autocapture," automatically captures an image when fingers are placed on the platen, without waiting for the user to press a button. (A200397; A200271; A200288.) Neither feature was invented by Cross Match. (A200271; A200288–289.)

B.! The Patents at Issue

The dispute here involves three patents, each covering at most a small and specific improvement on existing and well-known technology related to livescan fingerprint imaging. Only the '344 and '993 patents are at issue in this appeal, because the Commission found no infringement of the '562 patent by either

Suprema or Mentalix. (A000024; A000118–120.) This brief focuses Claim 19 of the '344 patent, which covers a particular method of segmentation and quality checking. (A000297, 19:24–37; A200426.) To perform segmentation, claim 19 requires detecting fingerprint area based on a concentration of black pixels, separately detecting fingerprint shape based on the arrangement of concentrated black pixels in an oval-like shape, and determining whether the detected area and shape are of an acceptable quality. (A000297, 19:31–37.)

C.! Suprema and Its Products

Appellant Suprema, founded in 2000, is incorporated and maintains its executive offices in Korea. (A200328; A302763; A302801.) Suprema is a leading biometrics company offering FBI-certified fingerprinting equipment, including the RealScan-F, RealScan-10, RealScan-D, RealScan-10F, RealScan-DF, RealScan-G10, and RealScan-G2 scanners at issue in this Investigation. (A200328; A200345; A303233.) To function, Suprema's live scanners must be connected to a separate computer running special software; the RealScan scanners capture the image and pass it to the computer, where the image may be processed:

(A200274; A200313; A302881.)

Suprema does not make or sell end-user software; with its scanners, it provides only non-executable sample code, a simple demonstration program, and an SDK. (A200398–399.) To provide a fully-operational fingerprint imaging system, Suprema's customers must develop their own software, and in doing so will typically incorporate utilities and routines from the SDK. (*Id.*) For example, Mentalix uses the Suprema SDK functions that allow Mentalix's software to receive images from the scanner. (A200313.) Mentalix does not use any segmentation functions offered by Suprema. (*Id.*; A301969; A200428.)

In developing its livescan devices, Suprema conducted market research to understand the requirements of its potential customers and its competitors'

offerings. (A200329.) Like most, it is common in the biometrics industry to acquire competitors' products to evaluate and understand them; [

]. (*See, e.g.,* A200114–116, 280:5–289:20; A301850, 77:18–23.) Suprema evaluated the products of certain competitors, [

]. (A200329, 1138:3–17.) Suprema contacted Cross Match directly to obtain sample devices, but Cross Match refused to sell any to Suprema. (A301922–23.) Suprema subsequently acquired a sample Cross Match scanner from a Mexican reseller of Cross Match's U.S. products, along with the associated SDK. (A301922.) At that time, Cross Match did not mark its U.S. products with the patents-in-suit. (A302291–292.)

Suprema's analysis merely identified the presence of certain features; it never copied any functionality of Cross Match's products. (*Id.*; A200332.) Indeed, it would be impossible to copy the specific functionality claimed in the '562 and '344 patents because this was buried in source code, which Suprema never acquired (or tried to). (*Id.*)

Suprema's Chief Research Engineer, Bong Seop Song, also searched for potentially relevant patents, to ensure that Suprema would not inadvertently run into legal issues with its planned product development. (A200330–31.) Mr. Song's search located the '562 patent and '932 patent, another Cross Match patent

that was originally asserted and then dropped by Cross Match. (*Id*.) Mr. Song reviewed the abstract of the '562 patent and concluded that it "didn't have any relevance to the products that we had in mind." (A200331.) The CALJ and Commission agreed, finding that Suprema did not infringe any claim of the '562 patent. (A000024; A000118–120.)

Given the inapplicability of the '562 patent, Mr. Song read no further than the abstract. (A200331.) As a result, Mr. Song never saw the following statement included in the body of the specification for the '562 patent:

> The present application is related to 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.1 0/345,420 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.

(A000316, 1:8–14.) The second of these applications, Serial No. 10/345,420, is the application for the '344 patent. (A00265.) Mr. Song's search failed to turn up the '344 patent, and Suprema only learned of it when Cross Match filed suit. (A301898; A200331.)

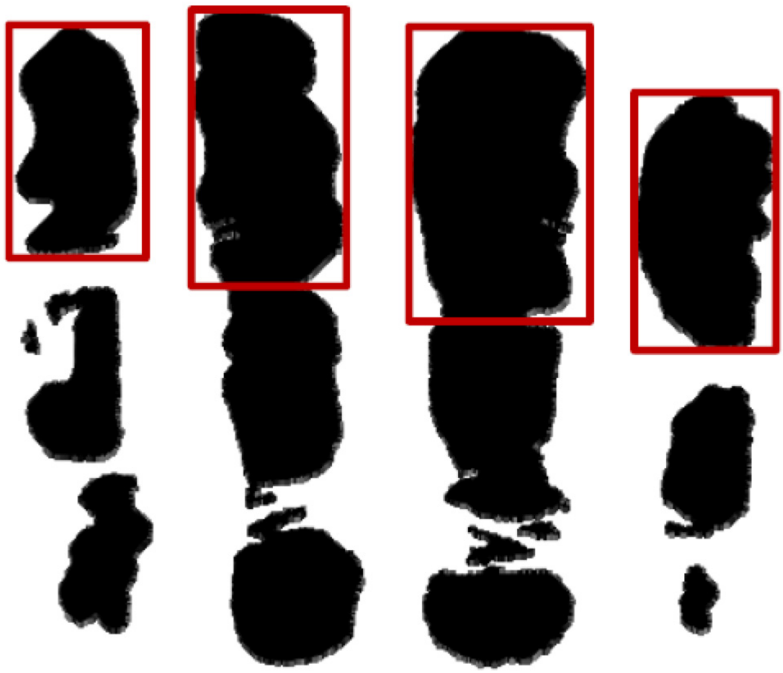
Because Suprema's patent search did not uncover any potentially problematic patents, it did not obtain any opinion of counsel. (A301898.)

D.! Mentalix and Its Products

Mentalix, founded in 1987, is headquartered in Plano, Texas and conducts all operations within the United States. (A200311.) It is a systems integrator of livescan systems and sells complete fingerprint acquisition systems to end users. (A200311; A200398.) These systems feature Mentalix's end-user software application, FedSubmit, which provides a suite of fingerprint acquisition and transmission capabilities. (*Id.*) Mentalix has sold FedSubmit since around 2002, six years before Suprema sold its first scanner to Mentalix. (A200312.)

FedSubmit is compatible with scanners sold by a number of companies, including Suprema and Cross Match. (A200311–312.) Before partnering with Suprema, Mentalix's FedSubmit software already included segmentation and quality-check functionality. (A200313.) Suprema's scanners and SDK, however, lacked this functionality, so when integrating those products, Mentalix had to turn elsewhere to acquire it. (A200313.) It ultimately chose to use free software provided to the public by the National Institute of Standards and Technology (NIST), a federal agency responsible for technological standards. (A200313–314; A200389–390; A200395–396; A301969.) Mentalix chose to use the NIST software; Suprema did not direct Mentalix to do so. (*Id*.) FedSubmit does not use Suprema's SDK to perform any segmentation or quality check, the functionality at issue in this appeal. (A200313.)

The FedSubmit functionality at issue in this appeal is undisputed. After FedSubmit receives an image from the scanner, it processes the image to make all pixels black or white, and applies the NIST segmentation function to the resulting "blobs" to identify the top-most, bottom-most, left-most, and right-most pixels of the blob in order to draw bounding boxes around them:



(A200255; A200456–457.)

SUMMARY OF ARGUMENT

The Court should reverse the Commission's determination and orders as to the '344 patent on multiple, independent grounds. To begin with, neither Suprema nor Mentalix imported, sold for importation, or sold after importation an infringing article. It is undisputed that the imported Suprema fingerprint scanners and SDKs do not themselves perform the steps of claim 19, and the Commission expressly determined the scanners and SDK to be capable of substantial non-infringing uses. Accordingly, and as found by the Commission, the Suprema scanners and SDK neither directly nor contributorily infringe the '344 patent. Thus, as of importation, these are *non-infringing* staple articles.

The Commission predicated the violation of section 337 on the subsequent combination with, and use of, Mentalix's FedSubmit software that allegedly practices a single method claim—claim 19 of the '344 patent—alleged infringement that is entirely domestic and occurs only *after* importation. The algorithm accused of practicing the steps of claim 19 was never imported; it came from NIST, and was implemented by Texas-based Mentalix into its own domestically-developed software.

By its plain language, section 337(a)(1)(B)(i) provides only for *in rem* liability, and is not co-extensive with all forms of patent infringement under 35 U.S.C. § 271. It empowers the Commission to bar only the importation, and sale

for or after importation, of *infringing articles*, not the importation of non-infringing staple articles based on the respondent's purported state of mind. The Commission's own precedent acknowledges that the determination of whether the imported article is an "article that – infringes" is made with respect to the time of importation, and that the alleged subsequent use of a patented method in the United States fails to meet the statutory requirements of section 337(a)(1)(B)(i). Thus, the importation of staple articles here cannot support a violation of section 337. As the Panel correctly found, the Commission lacks the statutory authority to exclude non-infringing staple articles of commerce based solely on a theory of inducement where the underlying direct infringement occurs only in the United States after importation.

In light of the unambiguous statutory limit on Commission authority, confirmed in *Certain Electronic Devices*, no deference is owed to the Commission's position here. The position now advanced by the Commission irreconcilably conflicts with the plain language of section 337 and its legislative history, it impermissibly and unreasonably expands substantive rights of patent holders to exclude importation of non-infringing staple articles, and it runs counter to the statutory scheme of enforcement by the U.S. Customs and Border Protection Service ("CBP").

The Court should also consider the alternative substantive bases for reversal as to the '344 patent, which the Panel found to be moot and thus did not address: (i) the Commission's finding of inducement based on legally erroneous findings of willful blindness and specific intent with respect to Suprema; and (ii) its construction of claim 19 of the '344 patent and corresponding infringement determination.

The Commission erred as a matter of law in its finding of "willful blindness" by Suprema, which the Commission substituted for actual knowledge of the '344 patent, a predicate for inducement. Suprema had no reason to seek advice of counsel or any reason to investigate potentially related patents after concluding, correctly, that it did not infringe the '562 patent. Suprema undertook no act for the purpose of avoiding knowledge of the '344 patent; at most, Suprema negligently failed to find it. Under Supreme Court precedent, willful blindness may be invoked as a substitute for actual knowledge of a patent when an accused infringer takes "deliberate actions *to avoid confirming a high probability of wrongdoing*." *Global-Tech. Appliances, Inc. v. SEB S.A.*, 131 S. Ct. 2060, 2070–71 (2011) (emphasis added). The Commission wrongly relied upon a highly-attenuated, hindsight collection of events that, notably, did not include any deliberate action by Suprema to avoid learning of the '344 patent. The Commission contends at most negligent inaction that, if avoided, might have uncovered the '344 patent: that

Suprema should have hired opinion counsel to verify its (correct) conclusion that it did not infringe the '562 patent, and that such counsel might have discovered an application referenced therein that would later ripen into the '344 patent.

The Commission further erred as a matter of law in finding that Suprema possessed the requisite specific intent to support infringement. Under Federal Circuit precedent, an inducer must *specifically intend*, through its inducing act, for a third party to infringe the patent. *See DSU Med. Corp. v. JMS Co.*, 471 F.3d 1293, 1306 (Fed. Cir. 2006) (en banc). The record at most shows that Suprema, by undertaking the same acts to support and sell its undisputedly non-infringing scanners to its customers—all of whom except Mentalix were found not to infringe the '344 patent—merely intended to sell to and support its customers. This does not satisfy the specific intent requirement, and is therefore legal error.

The Commission likewise legally erred in construing claim 19 of the '344 patent to read out its requirements of detection of (1) fingerprint area based on a concentration of black pixels; and (2) fingerprint shape based on an arrangement of the concentrated black pixels in an oval-like shape. The Commission erroneously found that a "bounding box" determines fingerprint area and shape. But it is undisputed that the accused software does not detect actual area or shape; it merely creates a box at the outer edges of an image, which may or may not be a fingerprint. This box does not determine the area or shape of the image inside; the

blob bounded by the box could be any conceivable shape and could range widely in area. Further, the Commission does not and cannot explain how a bounding box could simultaneously satisfy two separate claim elements (area detection based on a *concentration* of pixels, and shape detection based on an oval-like *arrangement* of pixels). By the plain language of the claim, these two determinations must be *based on* two separate bases, but a bounding box is based on neither—its edges are set independent of the concentration or arrangement of pixels bound by it. The Commission's interpretation of claim 19 effectively reads out the "based on" limitations of elements (e) and (f), and in doing so, constitutes legal error.

ARGUMENT

I.! STANDARD OF REVIEW

This Court reviews the Commission's rulings of law, including claim construction, *de novo*, and its factual findings for "substantial evidence." *Jazz Photo Corp. v. U.S. Int'l Trade Comm'n*, 264 F.3d 1094, 1099 (Fed. Cir. 2001); *Checkpoint Sys., Inc. v. U.S. Int'l Trade Comm'n*, 54 F.3d 756, 759–60 (Fed. Cir. 1995).

II.! THE COMMISSION ERRED IN FINDING THAT MENTALIX'S ALLEGED INFRINGMENT OF A METHOD CLAIM AND SUPREMA'S ALLEGED INDUCEMENT VIOLATE SECTION 337

The Commission's authority to order the exclusion of imported goods into the United States or to issue a cease-and-desist order is limited to those circumstances set out in section 337 of the Tariff Act, 19 U.S.C. § 1337, and any such Commission order is valid only if it falls within the authority granted under the statute. *Kyocera Wireless Corp. v. U.S. Int'l Trade Comm'n*, 545 F.3d 1340, 1355 (Fed. Cir. 2008). Here, the relevant authority and basis for the Commission's order is section 337(a)(1)(B)(i), which prohibits the "importation into the United States, the sale for importation, or the sale within the United States after importation . . . of articles that – infringe a valid and enforceable United States

patent."[6] Because the only products imported were staple articles of commerce and the alleged direct infringement was domestic use of a method claim, neither Suprema nor Mentalix imported or sold, either for or after importation, any articles that infringe the '344 patent. The Commission's finding of a violation, as well as the associated exclusion and cease-and-desist order, should therefore be vacated. As discussed below, this conclusion is mandated by a plain reading of the statutory language, and is consistent with the legislative history. It is also consistent with the Commission's abandonment of the "nexus" doctrine and its interpretation of section 337(a)(1)(B)(i) as applied to patented methods.

This Court interprets section 337 using the two-step framework of *Chevron U.S.A., Inc. v. Natural Resources Defense Council, Inc.,* 467 U.S. 837 (1984). *See Kyocera*, 545 F.3d at 1355. Under *Chevron*, the Court first seeks to "determine whether Congress's purpose and intent on the question at issue is judicially ascertainable" by "employ[ing] the 'traditional tools of statutory construction.'" *Timex V.I. v. United States*, 157 F.3d 879, 881–82 (Fed. Cir. 1998) (quoting *Chevron*, 567 U.S. at 843 n.9). If the Court finds clear Congressional intent, "that is the end of the matter; for the court, as well as the agency, must give effect to the

[6] Because the sold-for-importation and sold-after-importation bases for finding a violation of section 337(a)(1)(B)(i) both apply only to the very same "articles" as the importation prong, the three bases (imported articles, articles sold for importation, and articles sold after importation) will collectively be described as referring to "imported articles" or "importation."

unambiguously expressed intent of Congress." *Chevron*, 467 U.S. at 842–43 (footnote omitted). If, but only if, Congress's intent is ambiguous or unclear, the Court will defer to the Commission's interpretation if it is "reasonable" and "based on a permissible construction of the statute." *Id.* at 843, 844.

As explained below, Congress's intent that section 337(a)(1)(B)(i) would reach only infringing articles (*i.e.*, articles that infringe, not conduct that induces another's infringement) is apparent from the statutory language. "Articles that – infringe" is properly read grammatically as a limiting phrase by a plain reading of the statutory language, not read merely as a descriptive phrase (*i.e.* "articles, which infringe"). That intent is further confirmed by the statute's structure, purpose, and legislative history. The Commission's interpretation, which reaches the importation of staple articles (that by definition do not infringe), and inducement of infringement where there is no importation of infringing articles, is not entitled to deference because it is unreasonable and not a permissible construction. The Commission's interpretation conflicts with established rules of construction, impermissibly expands substantive patent rights, and is inconsistent with the established scheme of enforcement.

A.! Section 337(a)(1)(B)(i) Clearly and Unambiguously Prohibits Only the Sale or Importation of Articles that Infringe

The starting point for any question of statutory interpretation must be the text of the statute itself. *See, e.g.*, *Estate of Cowart v. Nicklos Drilling Co.*, 505

U.S. 469, 475 (1992). Where that text is clear and unambiguous, the plain language of the statute controls, and the Court need look no further. *See id.*; *White v. United States*, 543 F.3d 1330, 1337 (Fed. Cir. 2008) ("it is a bedrock canon of statutory construction that our judicial inquiry ends where statutory language is plain and unambiguous").

Section 337(a)(1)(B)(i) prohibits only three specific acts, each of which requires an "article" that infringes a valid U.S. patent: (1) the importation of "articles that – infringe a valid and enforceable United States patent" ("infringing articles"); (2) the sale for importation of infringing articles; and (3) the sale within the United States after importation of infringing articles. 19 U.S.C. § 1337(a)(1)(B)(i). Critically, section 337(a)(1)(B)(i) does not expressly incorporate 35 U.S.C. § 271 in its entirety, and does not purport to prohibit all conduct that might create liability under section 271. Instead, the scope of 337(a)(1)(B(i) is explicitly *in rem*, and speaks only to *infringing articles*.

The Commission itself agrees the statute is clear and unambiguous on this point:

> The plain language of the statute first identifies three specific acts that may form the basis of a violation of section 337: importation, selling for importation, and selling after importation. The statute then specifies, in list form, categories of articles that must be involved in the proscribed acts. First on the list are "articles that – infringe" a U.S. patent (citation omitted). (citation omitted). Because the statute specifies that the articles in

> question must "infringe," an importation analysis that ignores the question of infringement would be incomplete.

Certain Electronic Devices, 2011 ITC LEXIS 2869, at *23.

The Tariff Act does not define the term "articles that – infringe," and so the Court should interpret that phrase in light of the ordinary and accepted meaning of its words. *See NTP, Inc. v. Research In Motion, Ltd.*, 418 F.3d 1282, 1314–15 (Fed. Cir. 2005) ("In our interpretation of the statute, we 'give the words of a statute their ordinary, contemporary, common meaning, absent an indication Congress intended them to bear some different import.'") (quoting *Williams v. Taylor*, 529 U.S. 420, 431 (2000)). As relevant here, the ordinary meaning of the term "article" is straightforward. Black's Law Dictionary defines an article as "a particular item or thing." Black's Law Dictionary 127 (9th ed. 2009); *see Certain Digital Models, Digital Data, and Treatment Plans for Use in Making Incremental Dental Positioning Adjustment Appliances, the Appliances Made Therefrom, and Methods of Making the Same*, No. 337-TA-833, Comm'n Op. at 39 (Apr. 3, 2014) (analyzing dictionary definitions of "article"; "Contemporaneous definitions of 'article' embrace a generic meaning that is synonymous with *a particular item or thing*, such as a unit of merchandise.") (emphasis added).

Applying that general definition where the term "article" appears in the statute, the only bases for infringement liability under section 271 involving

articles are section 271(a) (direct infringement, *e.g.*, selling or importing "any patented invention"); and section 271(c) (contributory infringement, *i.e.*, selling or importing a component especially made for use in infringement and not a staple article).[7] Notably, section 337(a)(1)(B) omits any prohibition on the importation of articles *used* to infringe a patent, whether at the time of importation or subsequently.

By contrast, inducement of infringement, defined in section 271(b), only occurs when a person "actively induces infringement of a patent." 35 U.S.C. § 271(b). Inducement is fundamentally *in personam,* not *in rem* in nature; it requires evidence of "purposeful, culpable expression and conduct." *See Global-Tech Appliances, Inc. v. SEB S.A.*, 131 S. Ct. 2060, 2067 (2011) (citation omitted). While inducement could involve importation of infringing articles if the articles directly infringe or contributorily infringe under section 271(a) or (c), respectively,[8] it is the inducing party's "purposeful, culpable" *conduct*, and not the sale, importation, or character of the article itself that creates liability under

[7] Like the Panel, Appellants need not reach, and thus do not address, whether contributory infringement is within the scope of section 337(a)(1)(B), because the Commission expressly found no contributory infringement by the Suprema scanners and SDK.

[8] For example, if A provides a product to B that itself embodies every limitation of a claim, and separately by its conduct induces B's infringement, the facts might support direct infringement and inducement. In such a scenario, the inducement might arguably involve an infringing article. That is not the case here, however, which involves only staple articles.

section 271(b); a party may be liable for inducement of infringement without having sold (or imported) any article. 131 S. Ct. at 2067.

Nothing in either section 337 or section 271 somehow transforms a staple article into an infringing article. *See Metro-Goldwyn-Mayer Studios Inc. v. Grokster, Ltd.,* 545 U.S. 913, 932 (2005) (acknowledging "patent law's traditional staple article of commerce doctrine, now codified, that distribution of a component of a patented device will not violate the patent if it is suitable for use in other ways"). Indeed, where inducement is found as to staples, the inducing conduct may be enjoined, but not the sale of the staple article itself. *See Rohm & Haas Co. v. Dawson Chem. Co.*, 599 F.2d 685, 703 n.24 (5th Cir. 1979), *aff'd*, 448 U.S. 176 (1980) ("[A patentee may sue] a competing seller of staples who is 'actively inducing' infringement. ***The patentee's relief, however, would not be an injunction forbidding the defendants' sale of staples, since mere sale is not wrongful under either [35 U.S.C. § 271] (b) or (c).*** Appropriate relief might extend to an injunction against continuing to 'actively induce' infringement, conduct forbidden by [section 271] (b)."") (emphasis added).

Similarly, the mere sale or importation of a staple article by itself is not, as a matter of law, inducement of infringement, even where the seller knows that a purchaser will use the article in an infringing manner. *See, e.g.*, *Dynacore Holdings Corp. v. U.S. Philips Corp.*, 363 F.3d 1263, 1276 & n.6 (Fed. Cir. 2004)

("sale of a lawful product by lawful means, with the knowledge that an unaffiliated, third party may infringe, cannot, in and of itself, constitute inducement of infringement") (internal quotation marks omitted); *see also Sony Corp. of Am. v. Universal City Studios, Inc.*, 464 U.S. 417, 439–42 (1984). Inducement of infringement is a separate basis for liability, apart from any separate determination whether the article involved infringes. *See Rohm & Haas Co.*, 599 F.2d at 703 n.24**.** Thus, there is nothing to exclude under section 337(a)(1)(B)(i) for inducement where there has been no importation of articles that infringe, but only staple articles.

This reading is consistent with the Commission's own recent conclusion that the phrase "articles that – infringe," as used in section 337(a)(1)(B) means "***imported items*** of commerce ***as to which a finding of infringement of a patent . . . may be sustained***." *Certain Digital Models*, at 42 (emphasis added). The Commission furthermore explained, "We also interpret the phrase 'articles that – infringe' to reference the status of the articles *at the time of importation*." *Id*. (emphasis added).

Because section 337(a)(1)(B)(i) is limited to "articles that – infringe," which the Commission correctly interprets to "reference the status of the articles at the time of importation," the plain meaning of section 337(a)(1)(B)(i) unambiguously reaches infringement under section 271 only to the extent it involves *importation*

and/or sale of articles that infringe at the time of importation. *See Certain Electronic Devices*, 2011 ITC LEXIS 2869, at *24–25.

B.! Neither Mentalix nor Suprema Violated Section 337(a)(1)(B)(i) Because the Only Imported Articles Were Staple Articles of Commerce

Here, the only imported articles were Suprema's scanners and SDK, all of which were found not to infringe method claim 19 of the '344 patent unless and until combined with Mentalix's FedSubmit software in the United States. Because these articles were found by the Commission to have substantial non-infringing uses (*i.e.* are staple articles of commerce), and for section 337 purposes their status as "articles that – infringe" is determined "at the time of importation," neither Suprema nor Mentalix imported articles that infringe under section 337(a)(1)(B)(i), and the Commission's determinations under section 337 should be reversed as to the '344 patent.

1.! Mentalix's Alleged Domestic Use of a Patented Process Involves No Importation of Infringing Articles

The Commission found that Mentalix "directly infringed claim 19 by providing training and demonstrations of its integrated scanner system to the U.S. Census Bureau." (A000220.) The Commission explained that it could find a section 337 violation "if a nexus is found between the importation of the Suprema scanners and SDK and the unfair act of infringement." (*Id*.)

By the Commission's own pronouncements, however, its reasoning does not demonstrate a violation of section 337. In *Certain Electronic Devices*,[9] the Commission acknowledged that "a showing of a nexus between imported articles and alleged acts of infringement will not substitute for proof that all of the statutory requirements found in section 337 have been satisfied." *Certain Electronic Devices*, 2011 ITC LEXIS 2869, at *31. As such, a violation as to Mentalix could properly be found only if its alleged direct infringement satisfies the statutory requirements of section 337.

But *Certain Electronic Devices* itself forecloses the argument that domestic direct infringement of a method claim can violate section 337(a)(1)(B)(i). *Certain Electronic Devices*, 2011 ITC LEXIS 2869, at *31–34. As the Commission explained, because direct infringement of a patented method occurs only when a party actually practices all of the steps of the patented invention,[10] "domestic use of such a method . . . is not a sufficient basis for a violation of Section 337(a)(1)(B)(i), which concerns the 'importation' or 'sale' of articles that infringe a U.S. patent." *Id.* at *35.

[9] *Certain Electronic Devices* represented the Commission's interpretation of section 337 when this case was originally before the three-judge panel.

[10] *See, e.g.*, *Cardiac Pacemakers, Inc. v. St. Jude Medical, Inc.*, 576 F.3d 1348, 1359 (Fed. Cir. 2009).

Thus, as acknowledged by the Commission in *Certain Electronic Devices*, there is no question that Mentalix's alleged infringement, even if it occurred, cannot support a section 337 violation for two interrelated reasons. First, its only importation was of Suprema's scanners and SDK—articles that at the time of importation did not infringe because, as the Commission found, they were staple articles. Second, claim 19 is a method claim, only practiced through use or demonstration of the staple articles combined with FedSubmit software in the United States after importation. Even assuming, arguendo, that such use or demonstration constituted infringement, section 337 prohibits only importation and sale of articles that infringe, not their domestic use. As such, Mentalix did not violate section 337, and the Commission should be reversed accordingly.

2.! Suprema's Imported Scanners and SDK Are Staple Articles of Commerce, Not Infringing Articles

As to Suprema, its analysis similarly begins and ends with evaluation of the imported articles at the time of importation. Here, the Commission expressly found that Suprema's scanners and SDK neither directly nor contributorily infringe, as they are capable of substantial non-infringing use and thus staple articles of commerce. (A000228–229 (finding that Suprema's "scanners and SDK are capable of substantial non-infringing use").) By definition, therefore, the articles at issue are not infringing articles at the time of importation.

In addition, as the Commission found, because claim 19 of the '344 patent is a method claim, it was infringed (if at all) *only after* Mentalix combined the Suprema scanners with Mentalix's own domestically-developed FedSubmit software, and then used or demonstrated that combination within the United States. (A000220.) Suprema's alleged inducement of the claim 19 method is therefore beyond the reach of section 337, as it engaged in no conduct proscribed by section 337(a)(1)(B)(i): it did not import any articles that infringe; it did not sell for importation any infringing articles; and it did not sell in the U.S. after importation any infringing articles. The only importation was of staple articles.

Both the plain language of section 337(a)(1)(B)(i) and section 271 of the Patent Act compel this conclusion. As shown above, none of the subsections of section 337(a)(1)(B)(i) provides liability for inducement where only staple articles, not infringing articles, are imported or sold, and section 271(b), inducement, is not tied to any articles that infringe.

The Commission's view in this case that staple articles are somehow transformed into infringing articles if used after importation to directly infringe a method claim conflicts not only with the plain statutory language, but with the principles underlying the Commission's own determination in *Certain Electronic Devices*. As noted above, the Commission there held that an article cannot directly infringe a method claim at the time of importation because a method claim is only

infringed when each of the steps is performed. *Certain Electronic Devices*, 2011 ITC LEXIS 2869, at *31–32. Because the steps are not conducted until after importation, the Commission found direct infringement of the method claim to be beyond the reach of section 337(a)(1)(B)(i), as the articles did not infringe at the time of importation. *Id*. at *31–34.

The same reasoning applies here. The articles as imported do not infringe the ’344 patent. Infringement occurs, if ever, only after importation, when the products are combined with domestically-made software and used to allegedly practice the steps of method claim 19. Just as in *Certain Electronic Devices*, the fact that the imported products may later be combined with other things and then used to infringe a method claim does not mean they infringe at the time of importation.

Thus, the plain and unambiguous language of section 337(a)(1)(B)(i), read together with section 271, establishes that “articles that – infringe,” for purposes of section 337(a)(1)(B)(i), means unauthorized articles that (1) meet all of the elements of a claim of a patent; or (2) are components especially made for infringement and are not staple articles. The *in rem* language of section 337(a)(1)(B)(i) does not extend to the conduct-based liability of section 271(b) where, as here, there is no importation of articles that infringe. The Commission’s exclusion order as to Suprema should also therefore be overturned.

C.! The Relevant Legislative History of Section 337 Is Consistent with Section 337(a)(1)(B)'s Plain Meaning

Although the Court need not look beyond the unambiguous language of section 337, the relevant legislative history further confirms Congress's intent that section 337(a)(1)(B)(i) reach only infringing "articles," and not conduct that induces post-importation domestic infringement.

Section 337(a)(1)(B) was added to the Tariff Act as part of the Omnibus Trade and Competitiveness Act of 1988. Before 1988, section 337 cases involving patent infringement were handled under section 337(a)(1)(A)'s general prohibition on "unfair methods of competition and unfair acts in the importation of articles." But violations of section 337(a)(1)(A) require, among other things, an additional showing that the alleged unfair acts would cause "substantial injury" to a domestic U.S. industry, and Congress was of the belief that the so-called "domestic injury" requirement of section 337 did not square with its interest in protecting against the importation of infringing goods. *See* Report of the Committee on Finance, S. Rep. No. 100–71, at 128 (1987) ("The Committee believes that the injury and efficient and economic operation requirements of section 337, designed for the broad context originally intended in the statute, make no sense in the intellectual property arena.").

To remedy that disconnect, the 1988 amendments to section 337 added specific sections, including section 337(a)(1)(B)(i), to address the importation of

articles that infringe U.S. intellectual property rights. The legislative history for the 1988 amendments makes clear that in enacting section 337(a)(1)(B)(i), Congress's foremost concern was the importation of infringing *articles*. *See* S. Rep. No. 100–71, at 128 (purpose of proposed section 337 amendments was "to . . . address[] the growing problems being faced by U.S. companies from *the importation of articles which infringe U.S. intellectual property rights*") (emphasis added); *id.* ("Any sale in the United States of *a product* covered by an intellectual property right is a sale that rightfully belongs only to the holder or licensee of that property. The *importation of any infringing merchandise* derogates from the statutory right . . . .") (emphasis added). Nothing in the legislative history evidences a Congressional concern with preventing the importation of non-infringing articles that might later be used in an infringing manner in the United States.

Nor does the legislative history relied on by Appellees show otherwise. In their rehearing petitions, Cross Match and the Commission both cited to a statement from a conference committee report that the conferees did "not intend to change the interpretation or implementation of current law as it applies to the importation or sale of articles that infringe certain U.S. intellectual property rights." *See* Commission Pet. [Dkt. No. 88–1], at 12 (quoting H.R. Rep. No. 100–576, at 633 (1988)); Cross Match Pet. [Dkt. No. 90–1], at 13 (same). Appellees

interpret that statement as an endorsement of what they assert was the Commission's pre-1988 practice of finding violations of section 337 based on inducement.

As explained below, however, Appellees' proffered evidence of a supposed longstanding agency practice of excluding articles from the United States based on inducement of infringement is inapposite, and even if true, not binding. *See infra* Section II.D. In addition, the conference report statement upon which Appellees rely plainly does not suggest that Congress believed that section 337(a)(1)(B)(i) would allow the Commission to exclude non-infringing imported articles implicated in a party's inducement of domestic patent infringement.[11] At best, the statement simply parrots the very "articles that infringe" language that was

[11] Similarly, the generic statement in the legislative history that the purpose of the 1988 amendments to Section 337 was to "strengthen the effectiveness of Section 337" in addressing the importation of articles that infringe (*See* S. Rep. No. 100-71, at 128) also has no bearing on the meaning of the phrase "articles that infringe." The 1988 amendments indisputably *did* strengthen section 337, including by removing the domestic injury requirement for cases involving the importation of infringing articles and giving the Commission greater flexibility to issue cease-and-desist orders. But nothing in that general statement of purpose indicates a Congressional intent to encompass all importation-related conduct that could potentially give rise to liability for patent infringement under section 271. *See Dep't of Revenue v. ACF Indus.*, 510 U.S. 332, 345-46 (1994) (rejecting party's reliance on general statements in legislative history in case concerning lawfulness of certain state property tax exemptions where statements did "nothing more than manifest Congress' general concern with the discriminatory taxation of rail carriers," but did not "suggest[] that Congress had any particular concern with property tax exemptions").

ultimately added to the statute. Appellees' reliance on that statement as evidence of the *meaning* of section 337's reference to "articles that – infringe" is thus entirely circular. A statement indicating that Congress did not intend to change the law concerning "articles that infringe" provides no relevant insight into the meaning of the phrase "articles that infringe."[12]

D.! The Cases Cited by Appellees Are Inapposite and Cannot Trump Congressional Intent

In their rehearing petitions, Appellees cited a number of Commission opinions and decisions of this Court, from both before and after the 1988 amendments to section 337, that they contend demonstrate a longstanding Commission practice of finding violations of section 337 based on inducement

[12] Appellees' reliance on *Enercon GmbH v. International Trade Commission*, 151 F.3d 1376 (Fed. Cir. 1998), is also misplaced. *Enercon* involved allegations that the accused product directly infringed; at issue was whether there had been a "sale for importation" of the accused product sufficient to trigger a violation of section 337(a)(1)(B)(i). *See id.* at 1381-82. The phrase "sale for importation" had been added to section 337 in connection with the 1988 amendments to the statute, and the court looked to the conference report statement referenced above as confirmation that Congress's addition of the phrase "sale for importation" was not intended to narrow the Commission's jurisdiction. *See id.* at 1382-83. In addition, notably, in *Enercon*, the Commission found a section 337 violation based on its conclusion that the accused product, if imported and used, would infringe a method claim. *See id.* at 1378-79, 1380. Under *Certain Electronic Devices*, however, a case presenting the facts of *Enercon* would no longer result in a violation of section 337.

untied to importation of infringing articles.[13] In fact, however, none of the cases or Commission decisions cited by Appellees or the Panel dissent evidences any clear or consistent Commission practice, as none of those cases involved an exclusion order based solely on a party's supposed inducement of post-importation direct infringement. *See* Opposition to Rehearing Petitions [Dkt. No. 102], at 19–21 & n.9, 23 & n.11.

Moreover, even if the cases cited by Appellees and in the panel dissent were indicative of an established agency practice to find violations of section 337(a)(1)(B)(i) based on inducement alone, which they are not, any such past errors would have to yield to the clear statutory language limiting section 337(a)(1)(B)(i) to instances involving the sale or importation of "articles that – infringe." *See Pub. Emps. Ret. Sys. of Ohio v. Betts*, 492 U.S. 158, 171 (1989) ("Even contemporaneous and longstanding agency interpretations must fall to the

[13] The Panel dissent similarly incorrectly relied upon a list of proceedings that, in the view of the dissenting judge, demonstrated that the majority opinion conflicted with a "rich history of longstanding agency practice and legal precedent." *Suprema*, 742 F.3d at 1372-1373 & n.2.

extent they conflict with statutory language."); *Newman v. Teigeler*, 898 F.2d 1574, 1576–77 (Fed. Cir. 1990) (same).[14]

E.! The Commission's Interpretation of Section 337(a)(1)(B)(i) Is Unreasonable and Not Entitled To Deference

Even where Congressional intent is not apparent and the statute is ambiguous—not the case here—*Chevron* contemplates deference to the agency's proffered interpretation of a statute only where that interpretation is "reasonable" and "based on a permissible construction of the statute." *Chevron*, 467 U.S. at 843, 844. Here, even assuming ambiguity, the Commission's interpretation of section 337(a)(1)(B)(i) is unreasonable and would not be entitled to deference for at least three reasons: (1) the Commission's interpretation fails to give effect to the statutory requirement of "articles that – infringe"; (2) the Commission's interpretation would impermissibly expand the substantive rights afforded to patent holders under the Patent Act; and (3) the Commission's interpretation is inconsistent with *Certain Electronic Devices* and the statutory enforcement scheme.

---

[14] The dissenting judge on the panel further expressed concern that unscrupulous importers could circumvent section 337 by simply importing disassembled products. *See Suprema*, 742 F.3d at 1376-77. But the dissent conceded, as it must, that federal district courts are available to provide a remedy in any such situation. *See id.* at 1377. Regardless, that risk cannot trump the expressly limited scope of Congress's statutory grant of authority to the Commission and expand it to provide relief greater than afforded patentees under section 271. *See Limelight Networks, Inc. v. Akamai Techs., Inc.*, 134 S. Ct. 2111, 2120 (2014).

1.! The Commission's Interpretation Impermissibly Reads Out the Statutory Requirement of "Articles That – Infringe"

Insofar as the Commission asserts that section 337(a)(1)(B)(i) requires only a showing of infringing *conduct* – inducement – in connection with the importation of a staple article, the Commission's interpretation must be rejected because it fails to give effect to the statutory requirement of "articles that – infringe." *See Delverde, SrL v. United States*, 202 F.3d 1360, 1364–65 (Fed. Cir. 2000) ("We must try to read the statute as a whole, to give effect to all of its parts, and to avoid, if possible, rendering language superfluous.").

Had Congress intended section 337(a)(1)(B)(i) to reach all conduct in connection with the importation of articles that would give rise to liability for patent infringement under 35 U.S.C. § 271, it could easily have done so. Indeed, section 337(a)(1)(A), which long predates section 337(a)(1)(B), broadly prohibits *unfair acts* in the importation of articles, but that subsection is violated only upon a showing that the unfair acts cause a substantial injury to a United States industry. *See* 19 U.S.C. § 1337(a)(1)(A) (declaring unlawful "[u]nfair methods of competition and unfair acts in the importation of articles"). When Congress amended section 337 in 1988 to break out what is now section 337(a)(1)(B) to specifically address the protection of statutory intellectual property rights, Congress chose to prohibit only the importation of infringing articles, rather than replicating the broader "unfair acts" language of section 337(a)(1)(A), or importing

section 271 wholesale. Where, as here, Congress used different language in otherwise similar, and adjacent, subsections of a statute, the Court should presume that Congress intended different meanings. *See Heinzelman v. Sec'y of Health and Human Servs.*, 681 F.3d 1374, 1382 (Fed. Cir. 2012) ("It is well-established that, '[w]here Congress includes particular language in one section of a statute but omits it in another . . ., it is generally presumed that Congress acts intentionally and purposely in the disparate inclusion or exclusion.'") (quoting *Keene Corp. v. United States*, 508 U.S. 200, 208 (1993)) (alteration in original).[15] Because the Commission's interpretation renders the distinction between section 337(a)(1)(A) and (B) superfluous and fails to give effect to the statutory phrase "articles that – infringe," the Commission's interpretation is unreasonable and not entitled to deference.

2.! The Commission's Interpretation of Section 337 Impermissibly Expands Substantive Patent Rights

Where an agency interpretation conflicts with a clear Congressional mandate, *Chevron* deference is unwarranted. *Muwwakkil v. Office of Pers. Mgmt.*, 18 F.3d 921, 925 (Fed. Cir. 1994) ("When an agency's interpretation of a

[15] For that very reason, this Court's decision in *TianRui Group Co. v. International Trade Commission*, 661 F.3d 1322 (Fed. Cir. 2011), does not support Appellees' position. *TianRui Group* concerned the interpretation of section 337(a)(1)(A), which broadly prohibits "unfair acts" relating to importation, and not section 337(a)(1)(B), which prohibits only the sale or importation of "articles that – infringe."

statute . . . is contrary to the intent of Congress, as divined from the statute and its legislative history, we owe it no deference."); *Ethicon, Inc. v. Quigg*, 849 F.2d 1422, 1425 (Fed. Cir. 1988) (noting that as "the final authorities on issues of statutory construction," courts "must reject administrative constructions of the statute . . . that are inconsistent with the statutory mandate or that frustrate the policy that Congress sought to implement") (citation omitted).

As this Court has recognized, nothing in section 337 authorizes the Commission to expand the rights given to patent holders under substantive patent law. In *TianRui Group Co. v. International Trade Commission*, 661 F.3d 1322 (Fed. Cir. 2011), for example, this Court expressly acknowledged that the Commission's "broad and flexible authority" on matters relating to importation "cannot be used to circumvent express congressional limitations on the scope of substantive U.S. patent law." *Id.* at 1333; *see also In re Amtorg Trading Corp.*, 75 F.2d 826, 834 (C.C.P.A. 1935) (Congress did not intend to "broaden the field of substantive patent rights" in enacting section 337). As explained below, the Commission's position in this case—that section 337(a)(1)(B)(i) authorizes it to exclude from the United States staple articles of commerce where the Commission finds that such importation is part of a party's inducement of domestic patent infringement—must be rejected because it would improperly expand the

substantive rights of patent holders by effectively giving them hold-up power over the importation of staple articles of commerce.

It is well-established that because the limited monopoly afforded to patent holders inhibits competition, courts should not expand patent rights absent clear Congressional direction. *See*, *e.g.*, *Limelight Networks, Inc. v. Akamai Tech., Inc.*, 134 S. Ct. 2111, 2119 (2014) (describing Patent Act's "cornerstone principle that patentees have a right only to the set of elements claimed in their patents and nothing further"); *Microsoft Corp. v. AT&T Corp.*, 550 U.S. 437, 458 (2007) ("Given that Congress did not home in on the loophole AT&T describes, and in view of the expanded extraterritorial thrust AT&T's reading of § 271(f) entails, our precedent leads us to leave in Congress' court the patent-protective determination AT&T seeks."); *Sony Corp.*, 464 U.S. at 441 ("[T]he court has always recognized the critical importance of not allowing the patentee to extend his monopoly beyond the specific limits of his grant."); *Deepsouth Packing Co. v. Laitram Corp.*, 406 U.S. 518, 530–31 (1972) (claims that would potentially expand patent rights must be considered "in light of this Nation's historical antipathy to monopoly and of repeated congressional efforts to preserve and foster competition;" such claims "require a clear and certain signal from Congress").

In the case of indirect infringement through the sale of unpatented articles, Congress, in enacting the 1952 Patent Act, balanced those competing concerns by

prohibiting only the unauthorized sale of unpatented articles that are "especially made or especially adapted for use in an infringement" and "not a staple article or commodity of commerce suitable for substantial noninfringing use"—*i.e.*, non-staple articles. *See* 35 U.S.C. § 271(c). By so doing, Congress effectively gave patent holders the ability to control the sale of such ***non-staple*** articles. *See Dawson Chem. Co. v. Rohm & Haas Co.*, 448 U.S. 176, 201 (1980) ("[A]s a lawful adjunct of his patent rights, a [patent holder has] limited power to exclude others from competition in nonstaple goods.").

By limiting the patent holder to control over ***non-staple*** articles that are especially made or especially adapted for use in an infringing system, Congress gave no right to the patent holder to control the distribution or sale of those ***staple*** articles of commerce that ***do*** have substantial non-infringing uses. Thus, the mere sale of a staple article does not give rise to liability for inducement of infringement under section 271(b), even if the seller knows that a purchaser may use the product in an infringing manner. *See Dynacore Holdings Corp.*, 363 F.3d at 1276 & n.6. And while the seller of a staple article may be liable under section 271(b) if it engages in knowing conduct to induce another party's infringement, even in such cases, the patent holder is not entitled to any relief that would prohibit the sale of the staple article itself. *See Rohm & Haas Co.*, 599 F.2d at 703 n.24 (actively inducing conduct of seller of staple articles may be restrained, but not the sales of

staples themselves since their sale is not wrongful under either 35 U.S.C. § 271(b) or (c)); *Mickowski v. Visi-Trak Corp.*, 36 F. Supp. 2d 171, 182 (S.D.N.Y. 1999) (finding inducement of infringement, but refusing to enjoin manufacture or sale of staple articles capable of non-infringing use because such relief "would impermissibly expand the scope of Mickowski's patent monopoly by effectively granting Mickowski a monopoly over a product capable of noninfringing uses").[16]

By excluding staple articles, the Commission's orders in this case directly conflict with the above principles, as does the Commission's broader position that section 337 permits it to exclude from importation articles that do not themselves infringe any U.S. patent if the Commission concludes that their sale or importation is involved in inducing domestic patent infringement. By barring importation of staple article Suprema scanners that the Commission found were merely involved in inducing Mentalix's direct infringement, but that do not directly (or contributorily) infringe the '344 patent, the Commission has given Cross Match a substantive right to control the sale or distribution of staple articles that they do not have under the Patent Act. Because the Commission's interpretation of section 337 provides patent holders with rights beyond those granted under the Patent

[16] *See also* 5-17 Chisum on Patents § 17.04[3] ("Furthermore, the patent owner's remedies under Section 271(b) for active inducement cannot be expanded so as to establish exclusive control over the staple commodity. Such expansion would upset the delicate balance established by Section 271(d).").

Act—contrary to the clear intent of the statute and long-standing law—this interpretation is unreasonable and not entitled to deference.

3.! The Commission's Interpretation Is Inconsistent with the Commission's Remedial and Enforcement Authority

The Commission's interpretation of section 337 is also inconsistent with the regulatory scheme for enforcing ITC exclusion orders, and would create impossibly complicated enforcement problems in cases like this one.

The Commission's primary form of relief—the limited exclusion order preventing the importation of specific articles into the United States—is simply ill-suited to remedying conduct that involves the importation of a product that does not itself infringe any patent. An exclusion order that flatly prohibits importation of staple articles because they are involved in an inducement of infringement would necessarily be impermissibly over-inclusive, as it would bar the importation of the articles irrespective of the uses to which the articles might be put if imported, a substantial number of which, by definition, would be non-infringing. There is no reason why, for example, the staple article scanners here could not be used in a non-infringing manner by using software the Commission itself found not to be infringing, whether by Mentalix or anyone else.

It is no cure that the order here purports to exclude only those imports that "infringe,"[17] because as shown above, there is no concept of infringement under section 271 pursuant to which a staple article itself can "infringe" a patent.

In the absence of such a statutory measuring stick, there is no practical way for CBP, the agency charged with implementing the Commission's exclusion orders, to determine whether a staple article should be excluded. Pursuant to 19 C.F.R. § 12.39(b), CBP is authorized only to exclude "articles" that are subject to a Commission exclusion order. In cases of direct and contributory infringement, CBP can make that determination by examining the article itself in light of the patent claims and the Commission's findings and conclusions. For staple articles, however, examination of the article itself can never answer the question of whether an article is within the scope of a Commission exclusion order, since inducement depends on purposeful, culpable conduct and intent, and not on any attribute of an imported article. Staple articles, by definition, all look alike, whether or not used in an infringing method. CBP has no crystal ball by which it can predict whether, after importation, the staple article might be used in an infringing method. Likewise, CBP cannot read minds to divine whether at the time of importation—

[17] Dkt. No. 75, ¶ 1 (excluding "[B]iometric scanning devices . . . that infringe one or more claims of . . . claim 19 of the '344 patent").

the only time when the staple article is at a CBP holding facility and under CBP's control—its importation is intended for use later in an infringing method.

Nor are those problems solved by the inclusion of a "certification" provision giving CBP discretion to admit staple articles if the importer certifies that they are not covered by the order. At importation, an importer might not itself know to what uses it will put the staple devices, and it should not be required to forego importation of a staple article just because it could be used in an infringing method, when it is equally possible it may not. Likewise, by certifying the staple articles are not going to be used in an infringing method, the importer is taking on enormous responsibility for ensuring that its own downstream customers do not use the staple products in an infringing way. Like CBP, when receiving a shipment, the importer may have no ready way to determine whether the staple articles in question are covered, since the basis for exclusion is premised not on the imported article, but on the shipper's intent and the uses to which the product may be put by a downstream third party other than the importer once it enters the United States.

In sum, the Commission's remedial scheme is not designed for cases premised on inducement of infringement, and that shortcoming provides yet another reason the Commission's proffered interpretation of section 337 is unreasonable and contrary to the statutory language and legislative history.

III.! THE COMMISSION'S FINDING OF INDUCEMENT TO INFRINGE CLAIM 19 OF THE '344 PATENT IS LEGAL ERROR

Even if the Commission were correct that a violation of section 337 could be premised solely on inducement, the Commission's determination and orders should nevertheless be reversed based on legal error.

In addition to a predicate act of direct infringement by another, which is not present here (*see infra* Section IV), inducement requires *knowledge* of the patent and *specific intent and action* to induce the direct infringement. *See* 35 U.S.C § 271(b); *Global-Tech.*, 131 S. Ct. at 2068–69; *DSU Med. Corp.*, 471 F.3d at 1305.

As to the knowledge requirement, the Commission did not find that Suprema had actual knowledge of the '344 patent, and the undisputed record evidence establishes such lack of knowledge. (A000224; A301898.) Instead, the Commission erroneously found the knowledge requirement satisfied by "willful blindness," a doctrine addressed by the Supreme Court's *Global-Tech* decision and requiring deliberate actions to avoid confirming "a high probability of wrongdoing." *Global-Tech*, 131 S. Ct. at 2070–71. But the Commission fails to point to even a single act taken for the purpose of avoiding knowledge of the '344 patent. Disregarding the high culpability standard in effect, the Commission committed legal error, applying what is at most a negligence standard, *i.e.* that Suprema *should have* found the '344 patent.

The Commission also erred in concluding that Suprema possessed specific intent to induce Mentalix's alleged infringement. The acts relied on by the Commission—Suprema's distribution of inherently non-infringing software and provision of basic customer support for that software—reflect no intent to induce infringement. These acts simply reflect standard operation of a software business, and are the same acts performed by Suprema for its customers generally, including those found not to infringe.

A.! The Commission Found Willful Blindness Without the Requisite Deliberate Actions *to Avoid Knowledge*

The Commission's finding of induced infringement by Suprema turns the willful blindness standard on its head. In *Global-Tech*, the Supreme Court provided a clear directive that "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." *Global-Tech*, 131 S. Ct. at 2070–71. As explained in Suprema's original briefing, the Commission wrongly focused on *inaction* by Suprema, concluding that Suprema should have discovered the '344 patent by hiring opinion counsel to verify Suprema's own conclusion (later corroborated by the CALJ and the Commission) that it did not infringe a different patent, *i.e.*, the '562 patent. The Commission posits that though the '562 patent mentioned only the application that later ripened into the '344 patent, said counsel could have found the '344 patent application by

examining the ’562 patent, and then looked up the various referenced applications to ascertain that one had ripened into the ’344 patent. (*See* Appellants’ Principal Brief at 25–28 [Dkt. No. 36] and Reply Brief at 13–19 [Dkt. No. 63].) Setting aside whether this this Rube Goldberg-like chain is fairly characterized in hindsight as deliberate action versus mere inaction, the Commission never identified any action taken ***to avoid knowledge of the ’344 patent***. Each “act” relied on by the Commission is addressed below.

First, the Commission pointed out that Suprema acquired and evaluated Cross Match’s products, as well as those of other competitors. (A000221–222.) Nothing about Suprema’s competitive analysis evidences any intent, however, to shield itself of knowledge of the ’344 patent. Unlike in *Global-Tech*, Suprema did not actively seek out foreign versions of Cross Match’s products to avoid patent markings. Suprema first contacted Cross Match itself to purchase the products, and only after being there denied did Suprema obtain the products through another source. Importantly, Cross Match failed to mark any of its products with the numbers of the patents-in-suit during the relevant period, and thus no markings existed for Suprema to deliberately avoid.[18] (A302291–292.)

[18] The purpose of product marking is to “give notice to the public that the same is patented.” 35 U.S.C. § 287(a). Cross Match’s failure to mark its products suggests just the opposite; that the products are not patented.

Far from avoiding knowledge, Suprema affirmatively conducted a patent search, thereby finding Cross Match's '562 and '932 patents. (A000222–223.) The Commission takes issue with Suprema's failure to find the '344 patent as a result of that search, pointing out that the *application* leading to the '344 patent is referenced in the specification of the '562 patent found by Suprema. (A000223.) The Commission then asserts that "a word search *likely* would have identified" the '344 patent. (*Id*. (emphasis added).)

Again, the Commission at most applied a negligence standard, but regardless, Suprema's search *for* patents does not and cannot reflect any effort to *avoid* learning of Cross Match's patents, including the '344 patent. Regarding the '562 patent, Mr. Song reviewed its abstract, the purpose of which "is to enable the [USPTO] and the public generally to determine quickly from a cursory inspection the nature and gist of the technical disclosure." 37 CFR § 1.72(b); MPEP 608.01(b); (A200331). The abstract served its purpose; Mr. Song determined that the '562 patent was inapplicable to Suprema's scanners. Given that the Commission agreed with Mr. Song, finding Suprema did not infringe the patent, the correctness of his determination cannot be challenged. (A000024, A000118–120.)

Neither Mr. Song's correct determination nor any other evidence suggest any obligation to have investigated further or to have obtained counsel's opinion.

The Commission may believe[19] that Mr. Song was negligent or even reckless in not reading the entirety of the '562 patent, but that neither satisfies *Global-Tech* nor can it reasonably be construed as a deliberate act to avoid learning of the '344 patent. *See Eon Corp. IP Holdings LL v. FLO TV Inc.*, 802 F. Supp. 2d 527, 533 (D. Del. 2011) (dismissing indirect infringement claim because the allegation that defendants knew of the patent-in-suit because it was cited by two other patents they had licensed was "too tenuous to sustain an allegation of knowledge").

Similarly, although the Commission believes that a word search "likely" would have uncovered the '344 patent, it fails to identify any deliberate act taken to shield Suprema from knowledge of the patent. At most, the Commission's point provides support for a finding of negligence or recklessness—that Mr. Song *should have* read the entire specification or *should have* done a word search—but that is insufficient under *Global-Tech*.

The last "act" raised by the Commission is Suprema's inaction to obtain an opinion of counsel for the '562 patent—the one which it had concluded rightly it did not infringe. In doing so, the Commission improperly considered a failure to

[19] The CALJ did not make any findings of willful blindness; the Commission's after-the-fact conclusion was based solely on the cold record without any assessment of witness credibility. (*See, e.g.,* A000134 (stating that Cross Match had failed to prove inducement by Suprema); A000216 (stating that FID did not identify the infringer or state whether infringement was direct or indirect); A000220-227 (finding inducement based on record evidence).)

obtain an opinion of counsel as a basis for imputing *knowledge* of the patent—in the context of willful blindness—based on what counsel's opinion work might have revealed. Opinion-of-counsel evidence may be probative of specific intent of infringement (once knowledge of a patent is established) but the failure to obtain an opinion cannot bootstrap the lack of knowledge, particularly where there was no reason to obtain any opinion, nor any evidence of other deliberate actions that somehow would turn that inaction into a nefarious deed. Mr. Song rightly concluded, and the Commission agreed, that Suprema did not infringe the '562 patent. Were this Court to charge Suprema under such circumstances with knowledge of the '344 patent that only *might have been revealed* had it obtained counsel's opinion on a different patent (*i.e.*, the '562 patent)[20] such an approach would effectively impose an affirmative duty to obtain an opinion of counsel in nearly every case, an obligation this Court has squarely rejected. *In re Seagate Tech., LLC,* 497 F.3d 1360, 1371 (Fed. Cir. 2007) (en banc); *Knorr-Bremse Systeme Fuer Nutzfahrzeuge GmbH v. Dana Corp.*, 383 F.3d 1337, 1345–46 (Fed.

[20] Had Suprema sought such an opinion, there is no certainty that counsel would have found or brought the '344 patent to Suprema's attention. Counsel would have had no reason to flag the '344 patent's application, as to date no Suprema product has itself been found to infringe any claim of the '344 patent. It is beyond speculative to suppose counsel would have raised a concern that Suprema's products could infringe claim 19 when combined with Mentalix's software.

Cir. 2004) (en banc). Suprema's original briefing addresses this error in detail. (*See* Appellants' Principal Brief at 29–32 [Dkt. No. 36].)

The Commission's illogical, unsupported conclusions further evidence its errors:

> 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.

(A000224.) First, as noted above, far from blinding itself, Suprema actively searched for Cross Match's patents. Second, the statement that Suprema "took steps to avoid learning for certain that [its products] were" covered by Cross Match's patents simply does not make sense. Cross Match, after it determined that its claims lacked merit, dropped its infringement claims as to the '932 patent found by Suprema, and the Commission agreed with Suprema that it did not directly infringe the '562 and '344 patents. (*See* A000037.) As such, the Commission's statement is nonsensical–Suprema's scanners and SDK are not "covered" by the '344 patent; by the Commission's own findings, infringement results only from use with added FedSubmit software. The Commission's finding of willful blindness is based on a highly attenuated aggregation of hindsight hypotheticals all rooted in Suprema's inaction; there is no "deliberate act" by Suprema to avoid knowledge that could properly support this finding.

B.! No Specific Intent to Induce Infringement

The record evidence attests that Suprema's only "intent" was to supply customers, including Mentalix, with a high-quality live scanner and SDK—not to cause infringement. *See DSU Med. Corp.*, 471 F.3d at 1306 (the intent necessary to infringe is the intent to cause *infringement* as distinct from *acts* alleged to constitute infringement); *Kyocera*, 545 F.3d at 1354 (vacating and remanding inducement finding where the evidence established only intent to sell an allegedly-infringing product). Suprema merely sold staple products to customers and helped them use them. Suprema gave the same SDK and sample source code to all its customers so they could interface their own software with Suprema's scanners. (*See, e.g.*, A303017–18 ([ ] providing SDKs); A303019 ([ ] sending demonstration code); A303020 ([ ] attaching SDK); A305570 ([ ] discussing SDK).) Every other Suprema customer whose software was accused in this investigation was found not to infringe. (A000134.) Suprema took the same actions to help the other undeniably non-infringing customers as it did the single customer whose software was found to infringe. The only reasonably drawn conclusion is that Suprema at most intended to sell its (non-infringing) products and enable customers to use them. On this record, the finding of specific intent to induce cannot stand as a matter of law.

IV.! THE COMMISSION ERRED IN DETERMINING CLAIM 19 IS INFRINGED

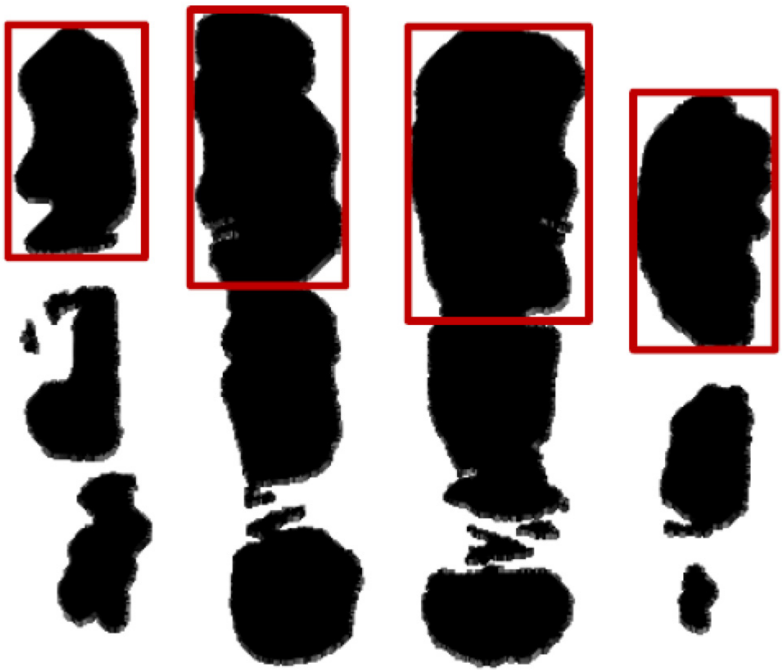
The Commission's finding of direct infringement by Mentalix—based on a flawed construction of claim 19 of the '344 patent—is also legal error.

The CALJ and, in turn, the Commission, erred in concluding that Mentalix's FedSubmit software practices method claim 19 of the '344 patent, which steps include:

> (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;

(A000297, 19:31–35 (emphasis added).)

The parties do not dispute how FedSubmit works. In an image, the software determines a four-sided "bounding box" that encloses the top part of a finger, (A000129–130), for example:



(A200255; A200456–457.)

As shown below, and explained in Appellants' principal and reply briefs,[21] the creation of a bounding box does not meet the limitations of both (e) and (f), as a matter of law or fact:

For example,

[21] Appellants' Principal Brief at 32–41 [Dkt. No. 36] and Reply Brief at 19–24 [Dkt. No. 63] explain these arguments in detail.

- Creating a bounding box does not detect the fingerprint *area*, only an uppermost boundary of how large the area could possibly be;
- Creating a bounding box does not detect the fingerprint *shape*, as a box could contain almost any conceivable shape;
- FedSubmit does not detect *oval-like shapes*; and
- The CALJ and Commission applied different, contradictory constructions for infringement and invalidity.

Significantly, the CALJ and Commission failed to give effect to the "based on" claim language of claim 19. Elements (e) and (f) detect different things (area vs. shape) based on different criteria (respectively, a *concentration* of black pixels, and an *arrangement* of the concentrated black pixels in an oval-like shape).

The patent's "based on" language requires that an infringing method use the recited different bases in the detection process. "[D]ifferent claim terms are presumed to have different meanings." *Helmsderfer v. Bobrick Washroom Equipment, Inc.*, 527 F.3d 1379, 1382 (Fed. Cir. 2008). The terms "arrangement" and "concentration" cannot mean the same thing absent any clear statement to the contrary in the intrinsic record, and here there was no such statement. *See, e.g.*, *CAE Screenplates v. Heinrich Fiedler GmbH & Co. KG*, 224 F.3d 1308, 1317 (Fed. Cir. 2000) ("In the absence of any evidence to the contrary, we must presume that the use of these different terms in the claims connotes different meanings.").

Here, the infringing method must base area detection on a *concentration* of pixels, and use a separate, different basis—an *arrangement* of pixels—for shape detection.[22]

The CALJ and Commission failed, however, to give effect to the "based on" claim language. The CALJ provided no reasoning as to how the single creation of a bounding box detects area "based on a concentration" of black pixels *and* detects shape "based on an arrangement" of the pixels, let alone how the single creation of such a box can at once be based on two different things. Instead, the CALJ simply stated:

> The administrative law judge finds that the process of creating a bounding box, as analyzed with respect to element e), supra, also detects a fingerprint shape as required by element f). Also, as the administrative law judge has found with respect to the construction of element c) of asserted claim 1, the concentrations of black pixels need only be comprised of oval-like shapes and does not require a calculation or determination of whether anything is oval-like. Fingerprints are generally oval shaped. 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 products.

(A000131 (internal citation omitted).)

[22] The purpose of detecting two different things—area and shape—is apparent in the next limitation in claim 19: "(g) determining whether the detected fingerprint area and shape are of an acceptable quality." (A000297, 19:36–37.) Area and shape are detected so that the quality of each can be determined.

Missing is any detection of area "based on" pixel concentration, or detection of shape "based on" any arrangement of pixels, let alone based on an "arrangement of the concentrated black pixels in an oval-like shape." The analysis also overlooks that the detected area and shape are then used to determine "acceptable quality." Indeed, FedSubmit makes no such determinations. (A200085, 164:1–165:18.) FedSubmit creates a bounding box irrespective of pixel arrangement. (*Id.*; *see also* A000129–130.)

For the reasons above and in Appellants' prior briefs, the determination of what is required to find infringement of claim 19 is legal error and should be reversed.

CONCLUSION

For the foregoing reasons, as well as those set forth in Appellants' Opening and Reply briefs, and in their brief in response to the Petitions for Rehearing En Banc, this Court should reverse the Commission's determination and orders regarding the '993 patent and claim 19 of the '344 patent.

Dated: August 12, 2014

Respectfully submitted,

/s/ Darryl M. Woo

Darryl M. Woo
Jae Won Song
Ilana Rubel
Bryan A. Kohm
David M. Lacy Kusters
Bradley T. Meissner
FENWICK & WEST LLP
555 California Street, 12th Floor
San Francisco, CA 94104
Telephone:(415) 875-2300
Facsimile: (415) 281-1350

Attorneys for Respondents-Appellants
Suprema, Inc. and Mentalix, Inc.

ADDENDUM
[Non-Confidential]

TABLE OF CONTENTS

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); Corning Glass Works v. Sumitomo Elec. U.S.A., Inc., 868 F.2d 1251, 1257 (Fed. Cir. 1989) (Corning 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 algorithm "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 impermissibly 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.)

{

}