NOTE: This disposition is nonprecedential

United States Court of Appeals for the Federal Circuit

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COGNEX CORPORATION AND
**COGNEX TECHNOLOGY & INVESTMENT
CORPORATION,**
Appellants,

v.

INTERNATIONAL TRADE COMMISSION,
Appellee,

AND

MVTEC SOFTWARE GMBH AND **MVTEC, LLC,**
Intervenors.

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2011-1098

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On appeal from the United States International Trade
Commission in Investigation No. 337-TA-680.

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Decided: December 16, 2013

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STEVEN M. BAUER, Proskauer Rose LLP, of Boston,
Massachusetts, argued for appellants. With him on the
brief was JACOB K. BARON.

CLINT A. GERDINE, Attorney, Office of the General Counsel, United States International Trade Commission, of Washington, DC, argued for appellee. With him on the brief were JAMES M. LYONS, General Counsel, and ANDREA C. CASSON, Assistant General Counsel for Litigation.

MATTHEW B. LOWRIE, Foley & Lardner, LLP, of Boston, Massachussetts, argued for intervenors. With him on the brief were AARON W. MOORE and KEVIN M. LITTMAN.

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Before REYNA, CLEVENGER, and LINN,* *Circuit Judges.*

LINN, *Circuit Judge.*

Cognex Corporation and Cognex Technology & Investment Corporation (collectively, "Cognex") appeal from a decision of the United States International Trade Commission ("Commission") finding that respondents, including MVTec Software GmbH and MVTec, LLC (collectively, "MVTec"), did not violate section 337 of the Tariff Act of 1930, as amended in 19 U.S.C. § 1337 ("section 337"), by the importation, sale for importation, or sale following importation of products alleged to infringe U.S. Patent No. 7,016,539 ("'539 Patent") and No. 7,065,262 ("'262 Patent"). *Certain Mach. Vision Software, Mach. Vision Sys., & Prods. Containing Same*, Inv. No. 337-TA-680 (USITC Nov. 16, 2010) (Commission Opinion); *Certain Mach. Vision Software, Mach. Vision Sys., & Prods. Containing Same*, Inv. No. 337-TA-680, 2010 WL 4778782 (USITC July 16, 2010) (Initial Determination) ("*Initial Determination*"). Because the Commission correctly found noninfringement of the asserted claims of the '539 Patent based on at least two claim limitations, this court affirms

the Commission's determination of no section 337 violation.[1]

I. BACKGROUND

A. The '539 Patent

On March 21, 2006, the PTO issued Cognex's '539 Patent, titled "Method for Fast, Robust, Multi-Dimensional Pattern Recognition." The '539 Patent is generally directed to "machine vision," which is "a system or set of procedures for taking in images, analyzing them, and then making decisions. The decisions are made by algorithms running in software and, sometimes, in hardware." *Initial Determination*, at *5. "Pattern location methods are of particular importance in industrial automation, where they are used to guide robots and other automation equipment in semiconductor manufacturing, electronics assembly, pharmaceuticals, food processing, consumer goods manufacturing, and many others." '539 Patent col. 1 ll. 25–30. Machine vision is useful in a variety of industrial processes; for example, it can be used "to detect and to remove randomly dispersed, mislabeled medicine bottles on a high-speed production line," "segregate pencils moving down a production line, at a rate of several hundred pencils per second, into sorting bins according to the color of their lead," or "to inspect electronic boards for

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[1]   While this appeal was pending, the United States Patent and Trademark Office ("PTO") issued a reexamination certificate cancelling all asserted claims of the '262 Patent, rendering the issue of their validity moot. *See* Am. Citation of Supplemental Authorities Pursuant to Fed. R. App. P. 28(j) and Fed. Cir. R. 28(i), June 21, 2013, ECF No. 65. Therefore, the '262 Patent is not addressed.

missing and misaligned components and to locate parts with a high degree of spatial accuracy such that they can be placed on to a printed circuit board." *Initial Determination*, at *6.

The '539 Patent discloses "a method for determining the absence or presence of one or more instances of a predetermined pattern in an image, and for determining the location of each found instance within a multidimensional space." '539 Patent, at Abstract. The claimed pattern detection process generally involves: (1) creating, from a training image or geometric description, a "model that represents the pattern to be found," *id.* col. 4 ll. 63–65; (2) providing a run-time image, *id.* col 40 l. 4, such as the digital images from "TV cameras operating on visible or infrared light, line-scan sensors, flying spot scanners, electron microscopes, X-ray devices including CT scanners, [and] magnetic resonance imagers," *id.* col. 1 ll. 8–12; and (3) utilizing algorithms to compare the model with the run-time image to detect the presence of the pattern at a given "pose," *see id.* col. 4 l. 65 to col. 5 l. 9, col. 12 ll. 28–39.

The specification defines a number of terms used in the written description and claims. A "pose" is defined as "the location of a pattern in a multidimensional space." *Id.* col. 4 ll. 46–47. The '539 Patent specification defines "image" as "[a] 2-dimensional function whose values correspond to physical characteristics of an object . . . and *measured by any image-forming device*, or whose values correspond to simulated characteristics of an object, and *generated by any data processing device*," *id.* col. 3 l. 66 to col. 4 l. 5 (emphases added), and defines "model" as "[a] set of *data encoding characteristics* of a pattern to be found for use by a pattern finding method," *id.* col. 4 ll. 25–26 (emphasis added).

Representative claim 1 of the '539 Patent recites:

1. A method for determining the presence or absence of at least one instance of a predetermined pattern in a run-time image, and for determining the multidimensional location (pose) of each present instance, the method comprising:

providing a model that represents the pattern to be found, the model including a plurality of probes, <u>each probe representing a relative position at which at least one test is performed in an image at a given pose</u>, each such test contributing evidence that the pattern exists at the pose;

providing the run time image;

comparing the model with the run-time image at each of a plurality of poses;

<u>computing a match score at each pose</u> to provide a match score surface;

<u>locating local maxima</u> in the match score surface;

<u>comparing the magnitude of each local maxima with an accept threshold</u>; and

<u>returning the location of each local maxima with magnitude that exceeds the accept threshold</u> so as to provide the location [of] any instances of the pattern in the image.

'539 Patent col. 39 l. 62 to col. 40 l. 14 (emphases added to reflect disputed claim limitations). The other asserted claims are all dependent, directly or indirectly, from claim 1.

B. Commission Proceedings

In July 2009, the Commission initiated Investigation No. 337-TA-680 based on complainant Cognex's allegations that respondents MVTec, Omron Corp., Daiichi Jitsugyo Viswill Co., Resolution Technology, Inc., and Visics Corp. violated section 337 by importing or selling following importation into the United States certain machine vision systems containing software that infringed claims 1–4, 18–21, and 24 of the '539 Patent. All of the claims in dispute are method claims.

In July 2010, the Administrative Law Judge ("ALJ") determined that all asserted claims of the '539 Patent were directed to abstract ideas and thus invalid under 35 U.S.C. § 101 for failing to claim patent eligible subject matter, and that Cognex failed to prove infringement with respect to any asserted claims. MVTec intervened in the action in support of the Commission's determinations on these issues. On review of the Initial Determination, the Commission supplemented and affirmed the ALJ's § 101 determinations, and adopted the ALJ's claim construction and noninfringement findings with respect to the '539 Patent. Cognex timely appealed the Commission's § 101 determination, claim construction, and noninfringement determination with respect to the asserted claims of the '539 Patent. This court has jurisdiction under 28 U.S.C. § 1295(a)(6).

II. DISCUSSION

A. Standard of Review

"Claim construction is a question of law that we review de novo." *Linear Tech. Corp. v. Int'l Trade Comm'n*, 566 F.3d 1049, 1054 (Fed. Cir. 2009). The Commission's infringement determinations are questions of fact that we review for substantial evidence. *Id.* at 1060.

B. Infringement of Claim 1 the '539 Patent

The Commission found that the accused product did not satisfy five of the seven limitations of claim 1 of the '539. For this court to reverse the Commission's noninfringement determination, we would have to find that the Commission erred in its findings with respect to all five limitations. We affirm the Commission's noninfringement findings with respect to claim limitations 1 and 6, and thus do not reach the other claim limitations on appeal.

Table 1: Limitations in claim 1 of the '539 Patent

Limitation	Claim Language	Commission Finding
Preamble	A method for determining the presence or absence of at least one instance of a predetermined pattern in a run-time image, and for determining the multi-dimensional location (pose) of each present instance, the method comprising:	Satisfied
1	providing a model that represents the pattern to be found, the model including a plurality of probes, each probe representing a relative position at which at least one test is performed in an image at a given pose, each such test contributing evidence that the pattern exists at the pose	Not Satisfied
2	providing the run-time image	Satisfied

3	comparing the model with the run-time image at each of a plurality of poses	Satisfied
4	computing a match score at each pose to provide a match score surface	Not satisfied
5	locating the local maxima in the match score surface;	Not Satisfied
6	comparing the magnitude of each local maxima with an accept threshold	Not Satisfied
7	returning the location of each local maxima with magnitude that exceeds the accept threshold so as to provide the location [of] any instances of the pattern in the image	Not Satisfied

i. Limitation 6: "comparing the magnitude of each local maxima with an accept threshold"

The Appellees argue that Cognex has failed to challenge each of the independent grounds upon which the Commission found noninfringement, primarily the sixth limitation: "comparing the magnitude of the local maxima with an accept threshold." '539 Patent col. 40 ll. 9–14. The ALJ's undisputed construction of the term "accept threshold" was "a value that a match must exceed to be considered an instance of a pattern." *Initial Decision* at *19. Based thereon, the ALJ found that the accused software did not use an "accept threshold," and thus did not practice the sixth claim limitation. *Id.* at 46–47. Cognex does not dispute, or even mention, the Commis-

sion's construction of "accept threshold" in its opening appeal brief; and in its reply brief, in response to the Appellee's waiver argument, Cognex fails to point out where it presented the issue in its opening brief. *Smithkline Beecham Corp. v. Apotex Corp.*, 439 F.3d 1312, 1319 (Fed. Cir. 2006) (holding that waiver exists where, "in response to [the Appellees'] argument that the issue had been waived by failure to include it in the opening brief, [Appellant] did not point out . . . where the issue had been presented in its opening brief."). Accordingly, Cognex waived any argument with respect to the Commission's construction of "accept threshold." *Id.* ("Our law is well established that arguments not raised in the opening brief are waived."). Based on Cognex's waiver, this court affirms the Commission's finding that the accused product does not practice claim limitation 6.

ii. Limitation 1: "each probe representing a relative position at which at least one test is performed"

The ALJ determined that, while the accused software "does have probes," it does not practice the first limitation of claim 1 because "it does not perform a test at 'each probe' as required by claim 1." *Initial Decision* at *23. Cognex asserts that the Commission erroneously equated data elements (which it asserts are not necessarily tested) with probes (which it admits must be tested). According to Cognex, a data element becomes a "probe" only when a test is *actually performed* at that data element, and thus the accused software necessarily tests "each probe" at a given pose. The Appellees counter that a data element is always a "probe," '539 Patent col. 5 ll. 5–6 ("According to the invention, *a model includes a set of data elements called probes.*"), and thus a test must be performed at each data element or "probe" at a given pose: "i.e., if there are 64 probes, 64 separate tests are performed," MVTec Br. 26.

Cognex's argument that a data element somehow transforms into a probe only upon testing is unavailing. The specification *defines* a data element as a "probe," '539 Patent col. 5 ll. 5–6, and the plain language of the claim requires that "*at least one test is performed*" at each "probe," *id.* col. 40 ll.1–2 (emphasis added). The specification also confirms that "[e]*ach probe represents a relative position at which certain measurements and tests are to be made* in an image at a given pose." *Id.* col. 5 ll. 6–9 (emphasis added). Accordingly, this court affirms the Commission's claim construction with respect to this claim limitation. Because the Commission's noninfringement determination based thereon is supported by substantial evidence, this court affirms the Commission's finding of noninfringement with respect to claim 1 of the '539 Patent.

Further, because all other asserted claims depend from claim 1, and a dependent claim necessarily cannot be infringed if the independent claim is not infringed, *Wahpeton Canvas Co., Inc. v. Frontier, Inc.*, 870 F.2d 1546, 1552 (Fed. Cir. 1989) ("One who does not infringe an independent claim cannot infringe a claim dependent on (and thus containing all the limitations of) that claim"), we also affirm the Commission's finding of noninfringement with respect to asserted claims 2–4, 18–21, and 24 of the '539 patent.

C. Patent Eligibility

The Commission's finding of non-infringement of the asserted claims of the '539 patent alone is sufficient to support its termination of the investigation based on no violation of section 337. Accordingly, this court need not

and does not address the Commission's determination with respect to 35 U.S.C. § 101.[2]

III. CONCLUSION

For the foregoing reasons, this court affirms the Commission's determination that claims 1–4, 18–21, and 24 of the '539 Patent are not infringed. Accordingly, the Commission's termination of the investigation based on no violation of section 337 is affirmed.

AFFIRMED

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[2] *See Texas Instruments Inc. v. Cypress Semiconductor Corp.*, 90 F.3d 1558, 1569 (Fed. Cir. 1996) (Legislative history and prior decisions of this court reveal Congressional intent that "decisions of the ITC involving patent issues have no preclusive effect in other forums . . . .")