United States Court of Appeals for the Federal Circuit

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CISCO SYSTEMS, INC.,
Appellant

v.

INTERNATIONAL TRADE COMMISSION,
Appellee

ARISTA NETWORKS, INC.
Appellant

v.

INTERNATIONAL TRADE COMMISSION,
Appellee

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2016-2563, 2016-2539

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Appeals from the United States International Trade Commission in Investigation No. 337-TA-944.

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Decided: September 27, 2017

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AMANDA PITCHER FISHEROW, Office of the General Counsel, United States International Trade Commission, Washington, DC, argued for appellee. Also represented by WAYNE W. HERRINGTON, SIDNEY A. ROSENZWEIG, DOMINIC L. BIANCHI.

Before REYNA, SCHALL, and WALLACH, *Circuit Judges.*

REYNA, *Circuit Judge.*

The International Trade Commission entered a limited exclusion order against Arista Networks, Inc. based on its final determination that Arista infringed three of Cisco Systems, Inc.'s patents. The Commission also determined that Arista did not infringe two other Cisco patents. The exclusion order excluded entry into the United States imports of certain network devices, related software, and components thereof. Arista appeals the Commission's infringement determination and the scope of the limited exclusion order. Cisco cross-appeals the Commission's noninfringement determination. Finding no error in the Commission's final determination or exclusion order, we affirm.

BACKGROUND

A. Procedural History

In January 2015, the Commission instituted a § 337 investigation based on Cisco's complaint alleging that Arista's imports of certain network devices, related software, and components thereof infringed six of its patents.[1] J.A. 501–02; 19 U.S.C. § 1337 (2012). In February 2016, an Administrative Law Judge (ALJ) issued a final initial determination finding a § 337 violation with respect to three patents: the '537 patent, '592 patent, and '145 patent. The ALJ's final initial determination found no § 337 violation based on the '597 patent and '164 patent. The '296 patent had previously been terminated from the investigation. Cisco and Arista filed petitions for review before the Commission.

The Commission agreed to review the ALJ's final initial determination. In June 2016, the Commission issued its final determination. The Commission determined that Arista infringed the asserted claims of the '537 patent, '592 patent, and '145 patent, and did not infringe the asserted claims of the '597 patent and '164 patent. J.A. 502. Based on this finding, the Commission entered a limited exclusion order against imports by Arista of "certain network devices, related software and components thereof." J.A. 502–03.

Arista appeals the Commission's claim construction of a term in the '537 patent and the scope of the limited

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[1] Cisco's complaint alleged infringement of certain claims of U.S. Patent No. 7,162,537 ("'537 patent"); U.S. Patent No. 8,356,296 ("'296 patent"); U.S. Patent No. 7,290,164 ("'164 patent"); U.S. Patent No. 7,340,597 ("'597 patent"); U.S. Patent No. 6,741,592 ("'592 patent"); and U.S. Patent No. 7,200,145 ("'145 patent").

exclusion order. Cisco cross-appeals the Commission's noninfringement finding with respect to the '597 patent.

B. Technology

1. '537 Patent

The '537 patent relates to a system and method of managing data in network devices. J.A. 903 at Abstract. Network devices, like routers or switches, have an operating system that controls the system's functions. Network devices use different specialized subsystems to perform the functions related to routing network traffic. In some prior art network devices, different subsystems carried out each network function, which required multiple dependencies between the subsystems. J.A. 912 at col. 1 ll. 37–40. These multiple dependencies made common transactions cumbersome and unnecessarily complicated, increasing the time required to design and develop various subsystems. J.A. 912 at col. 1 l. 65–col. 2 l. 3.

The '537 patent discloses a way to solve this multiple-dependency problem. The '537 patent employs a centralized database that allows each subsystem to be modular (i.e., capable of being easily added or removed from the network) and to operate independently to carry out its specialized functions. J.A. 913 at col. 3 ll. 13–38, col. 4 ll. 11–19. The centralized database is referred to as SysDB.

Cisco asserted claims 1, 2, 8–11, and 17–19 of the '537 patent. Claim 19 is representative of the claims and recites:

> 19. In a router device having a processor and memory, a router operating system executing within said memory comprising:
>
> (a) a database subsystem;
>
> (b) a plurality of client subsystems, each operatively coupled for communication to said database subsystem, one of said client subsystems config-

ured as a managing subsystem to externally man-
age router data upon issuing a management re-
quest to said database subsystem; and

(c) a database operatively coupled to said database
subsystem, said database configured to store rout-
er configuration data and delegate management of
router configuration data to a management sub-
system that requests to manage router configura-
tion data, said router configuration data managed
by said database system and derived from config-
uration commands supplied by a user and execut-
ed by a router configuration subsystem before
being stored in said database.

J.A. 920 at col. 18 ll. 21–39.

2. '597 Patent

The '597 patent generally relates to the field of infor-
mation networks, and a method and apparatus for secur-
ing a communications device using a logging module. The
patent explains that prior attempts to develop flexible and
secure logging modules were vulnerable to security at-
tacks. An attacker could, for example, disable a security
device by changing its configuration and then proceed to
attack the now-defenseless network device. J.A. 14342 at
col. 2 ll. 16–19.

The '597 patent describes a logging module that de-
tects and communicates information regarding a change
to a configuration of a subsystem. J.A. 14342 at col. 2 ll.
34–38. The logging module thereby can provide an indi-
cation whenever an attacker attempts to circumvent the
security of the subsystem. J.A. 14342 at col. 2 ll. 40–42.

Cisco asserted claims 1, 14, 15, 29, 39, 63, 64, and 71–
73 of the '597 patent. Claim 1 is representative of the
claims and recites:

1. An apparatus comprising:

a communications device comprising:

a subsystem; and

a logging module, coupled to said subsystem, and configured to detect a change to a configuration of said subsystem of said communications device, and communicate information regarding said change to said configuration of said subsystem of said communications device.

J.A. 14349 at col. 16 ll. 44–53.

3. Accused Devices

Arista sells network switches that are typically employed in computer data centers. Switches generally connect different devices to networks and facilitate data routing. Arista sells two types of switches, fixed and modular, and both types employ a software system called "Extensible Operating System," or "EOS." Arista Appellant Br. 4. EOS includes a number of "agents" (software routines) that each function to handle a specific task. The agents coordinate with each other through a centralized database called "SysDB" (also the name of the '537 patent's centralized database) which is in charge of maintaining and managing configuration information for each agent. ITC Appellee Br. 13.

Arista's EOS software also includes a process manager called "ProcMgr." ProcMgr is a software process that starts, stops, and restarts the agents based on the contents of directories in the EOS file system. In this way, ProcMgr monitors which agents are running.

At the time of the Commission hearing, the switches Arista imported were fully assembled, but did not have EOS software installed. Arista Appellant Br. 15. Though Arista loaded EOS software abroad and tested the switches with EOS software installed, Arista removed the

software before importation. ITC Appellee Br. 15. Arista then reloaded the software domestically onto these "blank switches." Arista also imports a small number of switch components. *Id.* at 16.

C.   Commission Decision

The Commission affirmed the ALJ's final initial determination that found Arista infringed the '537, '592, and '145 patents and did not infringe the '597 and '164 patents.

1. Claim Construction

The Commission addressed claim construction of the disputed term of the '537 patent:

> said router configuration data managed by said database system and derived from configuration commands supplied by a user and executed by a router configuration subsystem before being stored in said database

J.A. 512–14. The parties' dispute centered on whether router configuration data or user-supplied commands were "being stored in said database." The Commission determined that the proper construction "requires the storage of router configuration data" as opposed to user-supplied commands. J.A. 513.

In support, the Commission relied on intrinsic evidence. The Commission cited portions of the specification that show the focus of the '537 patent is to store and manage configuration data. J.A. 513 (citing J.A. 903 at Title and Abstract; J.A. 913 at col. 3 ll. 13–15; J.A. 913 at col. 3 l. 64–col. 4 l. 5; J.A. 914 at col. 6 ll. 26–28; J.A. 915 at col. 7 ll. 30–32; J.A. 915 at col. 7 l. 65–col. 8 l. 3; J.A. 915 at col. 8 ll. 7–9; J.A. 915 at col. 8 ll. 46–52).

The Commission also determined that the prosecution history supported its construction. Arista argued that the applicant distinguished a prior art reference by stating

that "[the prior art reference] fails to disclose . . . execut-ing configuration commands before storing them in a database," which would imply that the claimed invention requires storing configuration commands in a database. J.A. 513. The Commission disagreed, reasoning that the applicant was actually distinguishing the prior art refer-ence by arguing the prior art reference did not disclose configuration commands at all. J.A. 513–14.

2. Infringement of the '537 Patent

The Commission determined that under its claim con-struction, Arista's accused products directly infringed the asserted claims of the '537 patent. J.A. 518.

The Commission also addressed indirect infringement of the '537 patent. First, regarding induced infringement, the Commission found that Arista's sale and promotion of its accused products, including the blank switches, in-duced infringement of the '537 patent. Specifically as to switch hardware, the Commission determined that the switch hardware was designed to run the infringing EOS software, thus providing a basis for induced infringement. J.A. 528.

Second, as to contributory infringement, the Commis-sion determined that Arista's blank switches were a material part of the invention. J.A. 526–27. The Com-mission expressly did not reach the question of whether the *components* of the blank switches were material, finding instead that the components would be covered by the Commission's infringement finding if Arista attempt-ed to circumvent the Commission's exclusion order:

Although Arista argues that each of the imported components must also be material to the inven-tion, the Commission need not reach this issue. If Arista attempts to circumvent a Commission rem-edy by importing only the components of the ac-cused products for reassembly into complete

functional switches, it would still be in violation of [19 U.S.C. § 1337] because the Commission finds that the Blank Switches and the fully assembled complete switches indirectly infringe and the accused switch components are covered by this finding.

J.A. 527.

3. Noninfringement of the '597 Patent

The Commission affirmed the ALJ's finding that Arista's accused products did not infringe the '597 patent. J.A. 541–44. The '597 patent requires a system to "detect a change to a configuration of [a] subsystem." J.A. 541. The Commission determined that the design of Arista's software did not allow the relevant subsystem, ProcMgr, to "detect" another subsystem's configuration, but rather it "infer[red]" whether that subsystem was functioning. J.A. 542. Specifically, ProcMgr did "not have access to each agent's configuration." J.A. 541. Accordingly, the Commission determined that Arista's products did not infringe the '597 patent.

4. Exclusion Order

Having found a violation of § 337, the Commission entered remedial orders against Arista. J.A. 567–80. Specifically, the Commission ordered that "[n]etwork devices, related software and components thereof that infringe" certain claims of the '537 patent, '592 patent, and '145 patent "are excluded from entry for consumption into the United States." J.A. 568.

Arista appeals the Commission's claim construction of the '537 patent and the scope of the exclusion order. Cisco cross-appeals regarding the Commission's '597 patent noninfringement determination. We have jurisdiction under 28 U.S.C. § 1295(a)(6) (2012).

STANDARD OF REVIEW

We review the Commission's claim construction determinations de novo except for subsidiary facts based on extrinsic evidence, which we review for clear error. *DeLorme Publ'g Co. v. Int'l Trade Comm'n*, 805 F.3d 1328, 1331 (Fed. Cir. 2015).

The Commission's legal determinations are reviewed de novo and factual findings are reviewed for substantial evidence. *Spansion, Inc. v. Int'l Trade Comm'n*, 629 F.3d 1331, 1343 (Fed. Cir. 2010). A finding of infringement is a factual determination reviewed for substantial evidence. *Id.* at 1349. "Under the substantial evidence standard, a reviewing court must consider the record as a whole, including that which fairly detracts from its weight, to determine whether there exists such relevant evidence as a reasonable mind might accept as adequate to support a conclusion." *Id.* at 1343–44 (internal quotation marks and citation omitted).

We affirm the Commission's choice of remedy unless it is arbitrary, capricious, an abuse of discretion or otherwise not in accordance with law. *Hyundai Elecs. Indus. Co. v. Int'l Trade Comm'n*, 899 F.2d 1204, 1207–08 (Fed. Cir. 1990).

DISCUSSION

As discussed below, the Commission properly construed the '537 patent and correctly crafted the limited exclusion order. The Commission's '597 patent noninfringement determination is supported by substantial evidence.

A. Claim Construction of the '537 Patent

Claims 1, 10, and 19 of the '537 patent recite the relevant claim term:

> said router configuration data managed by said database system and derived from configuration commands supplied by a user and executed by a

router configuration subsystem before being stored in said database.

J.A. 919–20. The parties dispute whether "router configuration data" or "commands supplied by a user" are "stored in said database." We affirm the Commission's construction requiring "router configuration data" to be "stored in said database."

"[T]he words of a claim are generally given their ordinary and customary meaning." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (internal quotation marks and citation omitted). The ordinary meaning may be determined by reviewing various sources, such as the claims themselves, the specification, the prosecution history, dictionaries, and any other relevant evidence. *Ruckus Wireless, Inc. v. Innovative Wireless Sols., LLC*, 824 F.3d 999, 1002–03 (Fed. Cir. 2016) (citation omitted). We depart from the ordinary meaning when patentees act as their own lexicographers or disavow the full scope of a claim term in the specification or during prosecution. *Poly-Am., L.P. v. API Indus., Inc.*, 839 F.3d 1131, 1136 (Fed. Cir. 2016). The standard for disavowal is exacting, requiring clear and unequivocal evidence that the claimed invention includes or does not include a particular feature. *Id.* Ambiguous language cannot support disavowal. *Id.* (citing *Omega Eng'g, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1324 (Fed. Cir. 2003)).

Arista challenges the Commission's claim construction on two grounds. Arista's first challenge to the Commission's construction is a grammatical one. Arista argues that the prepositional phrase "*before* being stored in said database" acts as an adverb modifying the verb "executed." Thus, Arista argues, the thing "being stored" is the subject of the verb "executed," namely, the configuration commands. We do not find this argument persuasive in view of the specification and claims.

The '537 patent claims and specification support the Commission's construction. For example, representative claim 19 requires that the referenced database be "configured to store router configuration data," J.A. 920 at col. 18 ll. 32–33, but does not require that the database be configured to store user-supplied commands. This suggests that the configuration data must be stored, not the user-supplied commands.

The specification contains ample support for the Commission's construction. For example, the Title indicates that the '537 patent is directed to "managing router configuration data." J.A. 903. Likewise, the Abstract indicates that the system is directed to "externally managing router configuration data." *Id.* Further, the specification expressly addresses storage of configuration data:

> The config subsystem 28 carries out the operation of receiving configuration commands for a user of the router, executing the configuration command received from the user and providing configuration information to the user of the router upon request from the user, among other things. As described above, *this router configuration information is stored* and managed by the sysDB 26 in the sysDB tree 42.

J.A. 915 at col. 8 ll. 46–53 (emphasis added). In contrast, storage of user-supplied commands is not taught. The specification and claims read together therefore require storage of router configuration data, not user-supplied commands.

Arista's second challenge to the Commission's construction is based on the prosecution history. During prosecution, the applicant argued that a certain piece of prior art failed to teach the claimed invention because the prior art failed "to disclose teach or otherwise suggest executing configuration commands before storing them in a database." J.A. 1564. Thus, Arista argues, the appli-

cant understood that the invention stored user-supplied commands and that meaning should control. But the applicant later distinguished this prior art as failing to teach commands at all, whether or not they are stored: "Applicant submits that structures here are not commands, and can in no way be construed to be equivalent to router configuration commands." J.A. 1565. Indeed, the applicant later argued that the prior art reference failed to teach that "execution of user-supplied configuration commands results in *configuration data that is stored* in a database," as opposed to storing user-supplied commands. *Id.* (emphasis added). Contrary to Arista's argument, the applicant thus did not clearly state that the claimed invention required storing user-supplied commands. This ambiguous language from the prosecution history cannot form the basis of a disavowal of claim scope. *See Omega*, 334 F.3d at 1324. We thus affirm the Commission's claim construction.

B. Limited Exclusion Order

The Commission's limited exclusion order prohibits importation of "network devices, related software and components thereof" that infringe the '537 patent, '592 patent, and '145 patent. J.A. 568. Arista's main challenge is that the Commission did not make specific findings that the *components* of its accused products contribute to or induce infringement of the '537 patent, and thus the Commission exceeded its authority to regulate "articles that infringe." 19 U.S.C. § 1337(a)(1)(B)(i).

We disagree. The Commission sufficiently articulated its findings that the components of Arista's accused products induce infringement of the '537 patent. The Commission found that Arista's "switch hardware is designed to run the EOS software containing Sys[DB] and is run each time EOS is booted." J.A. 528. Although the Commission opinion does not separately define "switch hardware," the ALJ's final initial determination does:

"Switch hardware . . . includes all the individual components, such as a processor, memory, CPU card, chassis, switch card, and fan modules[.]" J.A. 682. The Commission expressly adopted the ALJ's final initial determination findings that were consistent with its opinion. J.A. 507. Thus the exclusion order properly bars the importation of components of Arista's infringing products. *See Suprema, Inc. v. Int'l Trade Comm'n*, 796 F.3d 1338, 1352–53 (Fed. Cir. 2015) (en banc) ("We hold that the Commission's interpretation that the phrase 'articles that infringe' covers goods that were used by an importer to directly infringe post-importation as a result of the seller's inducement is reasonable.").

We note that the Commission has "broad discretion in selecting the form, scope, and extent of [a] remedy, and judicial review of its choice of remedy necessarily is limited." *Hyundai Elecs.*, 899 F.2d at 1209 (quoting *Viscofan, S.A. v. Int'l Trade Comm'n*, 787 F.2d 544, 548 (Fed. Cir. 1986)). Courts will not interfere in the Commission's remedy determination except when "the remedy selected has no reasonable relation to the unlawful practices found to exist." *Id.* (quoting *Viscofan*, 787 F.2d at 548). "[I]f the Commission has considered the relevant factors and not made a clear error of judgment, we affirm its choice of remedy." *Id.* Blocking imports of articles that induce patent infringement has a reasonable relationship to stopping unlawful trade acts. *Suprema*, 796 F.3d at 1352–53. Accordingly, we see no error in the Commission's limited exclusion order.

As the Commission found that Arista's components induce infringement of the '537 patent, we do not address Arista's arguments related to contributory infringement. The Commission also found that the components of Arista's products induce infringement of the '592 patent and '145 patent. J.A. 566.047. This finding is not challenged on appeal, and provides another basis to affirm the Commission's limited exclusion order.

C.   Noninfringement of the '597 Patent

Cisco's cross-appeal challenges whether substantial evidence supports the Commission's determination that Arista's accused products do not infringe the asserted claims of the '597 patent.

The asserted claims require that the accused system "detect" a configuration change. The Commission determined that Arista's accused products did not "detect" another subsystem's configuration, but rather "infer[red]" whether that subsystem was functioning. J.A. 542.

Cisco argues that inferring is a form of detection, and therefore Arista's products infringe. The Commission, however, had before it evidence that showed that the accused functionality, ProcMgr, has no access to a subsystem's configuration, and thus cannot definitely know whether a configuration has changed. For example, the ProcMgr system does "not have access to each agent's configuration. Instead, ProcMgr only determines the last time the heartbeat file was updated." J.A. 541. Evidence showed that ProcMgr can only infer a change but it does not know what the change was, only that a change may have occurred. J.A. 6070–71. Where, like here, there is "such relevant evidence as a reasonable mind might accept as adequate to support a conclusion," we affirm the Commission's noninfringement determination. *Consol. Edison Co. v. NLRB*, 305 U.S. 197, 229 (1938). Because we affirm the Commission's finding of no violation with respect to the '597 patent, we do not reach Arista's "alternative ground" for affirmance that the Commission should have reversed the ALJ's determination that assignor estoppel barred Arista from challenging the '597 patent under 35 U.S.C. § 101.

CONCLUSION

We have considered the remainder of the parties' arguments and do not find them persuasive. The Commission's determination is affirmed.

AFFIRMED

COSTS

No costs.