

United States Court of Appeals for the Federal Circuit

EGENERA, INC.,
Plaintiff-Appellant

v.

CISCO SYSTEMS, INC.,
Defendant-Appellee

2019-2015, 2019-2387

Appeals from the United States District Court for the District of Massachusetts in No. 1:16-cv-11613-RGS, Judge Richard G. Stearns.

Decided: August 28, 2020

DAN L. BAGATELL, Perkins Coie LLP, Hanover, NH, argued for plaintiff-appellant. Also represented by ANDREW DUFRESNE, Madison, WI; MARTIN GILMORE, New York, NY; JOHN BRUCE CAMPBELL, JAMES ELROY QUIGLEY, JOEL LANCE THOLLANDER, McKool Smith, PC, Austin, TX; CHRISTOPHER THOR BOVENKAMP, Dallas, TX.

E. JOSHUA ROSENKRANZ, Orrick, Herrington & Sutcliffe LLP, New York, NY, argued for defendant-appellee. Also represented by EDMUND HIRSCHFELD, DANIEL A. RUBENS; ELIZABETH MOULTON, Menlo Park, CA; MARK S. DAVIES, ETHAN P. FALLON, ANNE SAVIN, Washington, DC; BRIAN

LEARY, JONAS R. MCDAVIT, TAMIR PACKIN, Desmarais LLP,
New York, NY.

Before PROST, *Chief Judge*, REYNA and STOLL, *Circuit Judges*.

PROST, *Chief Judge*.

Egenera, Inc. (“Egenera”) sued Cisco Systems, Inc. (“Cisco”) in the United States District Court for the District of Massachusetts, alleging that Cisco’s enterprise server systems infringe various claims of U.S. Patent No. 7,231,430 (“the ’430 patent”).

Prior to claim construction, and alongside an ongoing inter partes review (“IPR”) proceeding, Egenera separately petitioned the United States Patent and Trademark Office (“PTO”) to remove one of the eleven listed inventors from the ’430 patent. Following the district court’s claim construction and a trial on inventorship, Egenera asked the district court to add the removed inventor back to the patent. The district court determined that judicial estoppel prevented Egenera from relisting the inventor and held the ’430 patent invalid for failing to name all inventors. *See Egenera, Inc. v. Cisco Sys., Inc.*, 379 F. Supp. 3d 110 (D. Mass. 2019) (“*Invalidity Decision*”); *Egenera, Inc. v. Cisco Sys., Inc.*, 348 F. Supp. 3d 99 (D. Mass. 2019) (“*Judicial Estoppel Decision*”); *Egenera, Inc. v. Cisco Sys., Inc.*, No. 16-11613, 2018 WL 717342 (D. Mass. Feb. 5, 2018) (“*Claim Construction Decision*”).

Egenera appeals, challenging both the district court’s claim construction and the application of judicial estoppel. For the reasons described below, we affirm the district court’s claim construction but vacate the invalidity judgment based on judicial estoppel and remand for further proceedings.

BACKGROUND

I

Egenera owns the '430 patent, which claims a platform for automatically deploying a scalable and reconfigurable virtual network.

In April 2001, Egenera filed a provisional application that resulted in four nonprovisional applications containing the same specification. One of them resulted in the '430 patent, covering the “overarching system architecture.” Appellant’s Br. 12.

According to the '430 patent’s specification, it is difficult to anticipate the amount of computing power required in a large organization’s physical computer network, and manually upgrading or deploying new physical servers is slow and expensive. *See generally* '430 patent col. 1 ll. 21–61. To address this, the claimed system creates a quickly reconfigurable virtual network environment platform. The platform “provides a large pool of processors” for the virtual network to use. *Id.* at col. 2 ll. 47–52. A subset may be “selected and configured” to form a “virtualized network” (or, “processing area network”) to “serve a given set of applications or customer.” *Id.* Accordingly, “processing resources may be deployed rapidly and easily through software” instead of through physical reconfiguration. *Id.* at col. 2 ll. 57–62.

Claim 1, which is representative, reads:

1. A platform for automatically deploying at least one virtual processing area network, in response to software commands, said platform comprising:

a plurality of computer processors connected to an internal communication network;

at least one control node in communication with an external communication network and in communication with an external storage network having an

external storage address space, wherein the at least one control node is connected to the internal communication network and thereby in communication with the plurality of computer processors, said at least one control node including logic to receive messages from the plurality of computer processors, wherein said received messages are addressed to the external communication network and to the external storage network and said at least one control node including *logic to modify said received messages to transmit said modified messages to the external communication network and to the external storage network*;

configuration logic for receiving and responding to said software commands, said software commands specifying (i) a number of processors for a virtual processing area network (ii) a virtual local area network topology defining interconnectivity and switching functionality among the specified processors of the virtual processing area network, and (iii) a virtual storage space for the virtual processing area network, said configuration logic including logic to select, under programmatic control, a corresponding set of computer processors from the plurality of computer processors, to program said corresponding set of computer processors and the internal communication network to establish the specified virtual local area network topology, and to program the at least one control node to define a virtual storage space for the virtual processing area network, said virtual storage space having a defined correspondence to a subset of the external storage address space of the external storage network; and

wherein the plurality of computer processors and the at least one control node include network

emulation logic to emulate Ethernet functionality over the internal communication network.

'430 patent claim 1 (emphasis added).

In this case, the construction of “logic to modify” is at issue in the context of “at least one control node . . . including logic to modify . . . received messages to transmit said modified messages to the external communication network.”

Processors used by the virtual network may generate messages to be sent outside the network. But the outside network may use different protocols, *see Invalidity Decision*, 379 F. Supp. 3d at 125, and so there must be a way to modify outbound messages so that those messages will be compatible with the external network. This is done by the “logic to modify” within the “control node.” *See* '430 patent claim 1.

II

Egenera sued Cisco in August 2016 for infringement of the '430 patent. In response, Cisco filed an IPR petition challenging all eight of the patent's claims.

According to Egenera, upon reviewing the '430 patent after Cisco's IPR petition, it realized that all claim limitations had been conceived before one listed inventor, Mr. Peter Schulter, had started working there. Appellant's Br. 18–19. Mr. Schulter had been hired by Egenera during the invention's development for his “extensive networking experience” and to “refine and code the networking subsystem” of the invention. *Id.* at 11; *Invalidity Decision*, 379 F. Supp. 3d at 118. And so, one month after responding to the IPR petition, Egenera separately petitioned the PTO to remove Mr. Schulter as a listed inventor. *Judicial Estoppel Decision*, 348 F. Supp. 3d at 101; J.A. 9367–80. By then, Mr. Schulter, as well as most of the named inventors, no longer worked for Egenera. It is apparent that at least part of Egenera's motivation to remove Mr. Schulter was to

facilitate swearing behind “Grosner,” a piece of prior art asserted against Egenera in the IPR. *See Invalidity Decision*, 379 F. Supp. 3d at 114. Grosner’s priority date was November 2, 2000. *Id.* at 113. And Mr. Schulter joined Egenera on October 2, 2000. *Id.* at 112. But Egenera argued an even-earlier conception date of September 29, 2000. *Id.* at 114.

While the inventorship petition was pending, the Board declined to institute Cisco’s IPR. J.A. 10912–28. In so doing, it assumed Grosner was prior art but nevertheless concluded that Cisco had not met its burden of establishing a reasonable likelihood of prevailing on the merits. J.A. 10922. Shortly thereafter, in January 2018, the PTO granted Egenera’s petition and removed Mr. Schulter’s name. J.A. 9387.

Cisco had not argued that any of the “logic” terms should be interpreted as means-plus-function in the IPR, nor in its invalidity contentions. *E.g.*, J.A. 10368, 12412–14. But it advanced a means-plus-function construction at the district court. And in February 2018, the district court issued an order construing the patent’s “logic” terms as means-plus-function elements. *Claim Construction Decision*, 2018 WL 717342, at *1, *4–10. It concluded that the structure in the specification corresponding to the claimed function of the “logic to modify” was the so-called tripartite structure—the combination of a virtual LAN proxy, a physical LAN driver, and a virtual LAN server. *Id.* at *6–7; *Invalidity Decision*, 379 F. Supp. 3d at 128.

Cisco next filed an amended answer in the district court asserting invalidity based on pre–America Invents Act (“AIA”) § 102(f)—contending that Mr. Schulter invented the tripartite structure, and therefore that the patent did not list all inventors. J.A. 3238, 3251. In August 2018, Cisco moved for summary judgment of invalidity on this ground, which the district court denied, finding triable issues of fact regarding inventorship. *Judicial*

Estoppel Decision, 348 F. Supp. 3d at 108–09. But the court also rejected Egenera’s argument that if the trial showed Mr. Schulter to be an inventor, the patent’s inventorship should be corrected under 35 U.S.C. § 256(b). *Id.* at 101–02. The court reasoned that judicial estoppel precluded Egenera from “resurrect[ing]” Mr. Schulter’s inventorship. *Id.* at 102.

The court conducted a three-day bench trial on inventorship. *Invalidity Decision*, 379 F. Supp. 3d at 112. The court found, in Cisco’s favor, that Mr. Schulter *had* conceived the tripartite structure. *Id.* at 125–29. The court then reiterated that Egenera was judicially estopped from invoking § 256 to restore Mr. Schulter’s name, thereby holding the ’430 patent invalid. *Id.* at 129.

Egenera appealed the invalidity judgment, challenging the underlying construction of “logic to modify” and the application of judicial estoppel. We have jurisdiction under 28 U.S.C. § 1295(a)(1).

DISCUSSION

I

First we address Egenera’s contention that the district court’s claim construction was wrong.

At issue is the “logic to modify” limitation, which the district court construed as a means-plus-function element. For the reasons below, we agree with the district court’s claim construction.

The ultimate interpretation of a patent claim is a legal question that we review de novo. *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1346 (Fed. Cir. 2015) (citing *Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 574 U.S. 318, 331–32 (2015)). To the extent the district court makes underlying findings of fact based on extrinsic evidence, we review them for clear error. *Id.*

Means-plus-function claiming occurs when a claim term invokes 35 U.S.C. § 112(f),¹ which states:

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

We presume that claim terms with the word “means” invoke § 112(f) and that claim terms without the word “means” do not. *Williamson*, 792 F.3d at 1348 (en banc).² This presumption, however, does not permit patentees to freely engage in functional claiming while circumventing § 112(f) simply by avoiding the word “means,” as we clarified in *Williamson*. See *id.* at 1349 (warning of “a proliferation of functional claiming . . . free of the strictures set forth in the statute”). And so the presumption against means-plus-function interpretation is rebuttable if a challenger demonstrates that a claim term either fails to “recite sufficiently definite structure” or recites “function without reciting sufficient structure for performing that function.” *Id.* (quoting *Watts v. XL Sys., Inc.*, 232 F.3d 877, 880 (Fed. Cir. 2000)).

We clarified in *Williamson* that the presumption against means-plus-function claiming is not “strong” and that a challenger need not show that the limitation is “essentially . . . devoid of anything that can be construed as

¹ Although pre-AIA § 112, ¶ 6, applies in this case, the AIA recodified that provision as § 112(f). We use the AIA numbering for convenience.

² The discussion in *Williamson* of the applicability of § 112(f) was joined by the en banc court. 792 F.3d at 1347–49 & n.3.

structure.” *Id.* Rather, a challenger need only show that the structure is not “sufficient.” *See id.*; *TEK Glob., S.R.L. v. Sealant Sys. Int’l, Inc.*, 920 F.3d 777, 785 (Fed. Cir. 2019). For example, “[g]eneric terms such as ‘mechanism,’ ‘element,’ ‘device,’ and other . . . verbal constructs may be used in a claim in a manner that is tantamount to using the word ‘means’ because they ‘typically do not connote sufficiently definite structure’ and therefore may invoke [§ 112(f)].” *Williamson*, 792 F.3d at 1350 (quoting *Mass. Inst. of Tech. v. Abacus Software*, 462 F.3d 1344, 1354 (Fed. Cir. 2006)). Such terms may amount to “generic terms or black box recitations of structure or abstractions.” *MTD Prods. v. Iancu*, 933 F.3d 1336, 1341 (Fed. Cir. 2019) (quoting *Zeroclick, LLC v. Apple Inc.*, 891 F.3d 1003, 1008 (Fed. Cir. 2018)). Or a term may amount to a coined “nonce word”—that is, a word “invented . . . for one occasion only.” *See* Bryan A. Garner, *Garner’s Modern English Usage* 1016 (4th ed. 2016); *Webster’s Third New International Dictionary* (1961) (defining “nonce word” as “a word . . . coined and used apparently to suit one particular occasion . . . but not adopted into use generally”); *Lighting World, Inc. v. Birchwood Lighting, Inc.*, 382 F.3d 1354, 1360 (Fed. Cir. 2004) (noting that either a “generic structural term” or a “coined term” can invoke § 112(f)).

If the presumption against means-plus-function interpretation is overcome, we must “identify the claimed function” and then “determine what structure, if any, disclosed in the specification corresponds to the claimed function.” *Williamson*, 792 F.3d at 1351. These are questions of law, reviewed de novo. *Kemco Sales, Inc. v. Control Papers Co.*, 208 F.3d 1352, 1360 (Fed. Cir. 2000).

“To determine whether the claim limitation at issue connotes sufficiently definite structure to a person of ordinary skill in the art, we look first to intrinsic evidence, and then, if necessary, to the extrinsic evidence.” *TEK Glob.*, 920 F.3d at 785 (citing *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc)).

A

Egenera insists that the district court erred in construing “logic to modify” as a means-plus-function limitation.

The ’430 patent contains several “logic” terms. The district court construed them all as means-plus-function; Egenera challenges only the construction of “logic to modify said received messages to transmit said modified messages to the external communication network and to the external storage network.”

1

The district court observed that, in the claim language, each “logic” term was “described by a specific function” and was unaccompanied by “structural components.” *Claim Construction Decision*, 2018 WL 717342, at *5.

Examining the intrinsic evidence, the district court explained that “[t]he specification discloses that ‘logic’ has to be implemented,” *id.* (citing ’430 patent col. 23 ll. 23–24, col. 25 ll. 3–4), and that such implemented logic could be “software logic” or “BIOS-based,” *id.* (citing ’430 patent col. 3 ll. 61, 63, col. 6 l. 18). The court concluded that the specification was then “consistent with an understanding of logic as an abstraction for the set of steps designed to accomplish a stated function.” *Id.*

Egenera had argued that “logic” denotes “software, firmware, circuitry, or some combination thereof.” *Id.* at *4. The district court noted that Egenera’s favored definition was itself “so broad and formless as to be a generic black box for performing the recited computer-implemented functions.” *Id.* at *6 (cleaned up).

Accordingly, the court concluded that the totality of the evidence rebutted the presumption against means-plus-function claiming.

2

On appeal, Egenera, pointing to its expert’s explanation and dictionary definitions, argues that “‘logic’ is a common term of art meaning software, firmware, circuitry, or [a] combination thereof.” Appellant’s Br. 51. As Cisco argues, “logic” as used in the claims means only a “general category of whatever may perform” the function. Appellee’s Br. 58, 62; *cf. Williamson*, 792 F.3d at 1350 (“[M]odule’ is simply a generic description for software or hardware that performs a specified function.”).

The question is not whether a claim term recites *any* structure but whether it recites *sufficient* structure—a claim term is subject to § 112(f) if it recites “function without reciting sufficient structure *for performing that function.*” *Williamson*, 792 F.3d at 1348 (emphasis added) (quoting *Watts*, 232 F.3d at 880). Egenera does not explain how its “logic”—even assuming it connotes some possible structure in the general sense of software, firmware, or circuitry—amounts to “*sufficient* structure for performing [the modification] function.” *See id.* (emphasis added).

Egenera also argues that the “larger claim context” indicates that “logic” is structural because the “logic to modify” is part of a supposedly structural component—the “control node.” Appellant’s Br. 52; Reply Br. 22. But that is not enough. Mere inclusion of a limitation within a structure does not automatically render the limitation itself sufficiently structural. And, again, the question is not whether “logic” is utterly devoid of structure but whether the claim term recites sufficient structure to perform the claimed functions.

Egenera next argues that the claim language defines the “inputs, outputs, connections, and operation” of the logic component. Appellant’s Br. 52–54 (citing *Apple Inc. v. Motorola, Inc.*, 757 F.3d 1286, 1299–303 (Fed. Cir. 2014); *Linear Tech. Corp. v. Impala Linear Corp.*, 379 F.3d 1311, 1319–21 (Fed. Cir. 2004); *Mass. Inst. of Tech.*, 462 F.3d

at 1355–56; and *Lighting World*, 382 F.3d at 1359–63); Reply Br. 23. But the cases Egenera cites do not compel its favored outcome and do not endorse black-box claiming. First, none of Egenera’s precedent considers *Williamson*. See *Media Rights Techs., Inc. v. Capital One Fin. Corp.*, 800 F.3d 1366, 1373 (Fed. Cir. 2015) (cautioning against relying on pre-*Williamson* precedent). Second, in those cases the claim language and specification provided sufficient structure to the “inputs, outputs, connections, and operation” such that the pre-*Williamson* strong presumption against means-plus-function claiming was not overcome. *E.g.*, *Apple*, 757 F.3d at 1303 (noting that because “the claim language and specification outline the rules that the [claim term] follow[s],” the written description places clear structural limitations on the claim term and so the “patent recites a claim term with a known meaning”). In contrast, here the claims and specification provide no structural limitation to the “inputs, outputs, connections, and operation” of the claimed “logic to modify.”

We agree with Cisco: § 112(f) applies here. As used, “logic” is no more than a “black box recitation of structure” that is simply a generic substitute for “means.” See *Williamson*, 792 F.3d at 1350. We therefore conclude that Cisco overcame the presumption against applying § 112(f).

B

Egenera next argues that the district court identified the wrong structure as corresponding to the claimed functions of the “logic to modify” limitation.

This limitation recites two functions: (1) “to modify said received messages to transmit said modified messages to the external *communication* network”; and (2) “to modify said received messages to transmit said modified messages . . . to the external *storage* network.” See ’430 patent claim 1 (emphases added).

The district court concluded that the structure corresponding to the first function was “virtual LAN server 335, virtual LAN proxy 340, and physical LAN driver 345” and equivalents. *Claim Construction Decision*, 2018 WL 717342, at *7. The parties call this the “tripartite structure.”

Egenera now argues on appeal that the tripartite structure is too broad. Appellant’s Br. 55–59. Within the tripartite structure, insists Egenera, only the virtual LAN proxy “modifies outgoing messages.” *Id.* at 59. Cisco disagrees, pointing to its expert’s testimony that the proxy does not “act in isolation” and “cannot perform the recited function . . . by itself.” Appellee’s Br. 72 (citing J.A. 1431). Rather, the LAN proxy is merely “the middleman.” *Id.* at 73. And, argues Cisco, Egenera cannot switch the scope of its claim construction on appeal.

Egenera previously identified “control node 120” and equivalents as the corresponding structure when it argued at the district court. *Claim Construction Decision*, 2018 WL 717342, at *7. As Cisco highlights, this control node is a broad structure that itself encompasses the tripartite structure. *See* Appellee’s Br. 70. Indeed, Egenera argued below that the tripartite structure was “overly[]narrow.” J.A. 3060.

Now Egenera contends that the structure it objected to as overly narrow must be narrowed further. Egenera explains that, below, its proposed structure corresponded to *both* claimed functions—i.e., not only messages to the “external communication network” but also messages to the “external storage network.” Reply Br. at 24–26. We find unpersuasive this explanation for Egenera’s switch in scope, as Egenera fails to explain *how* subtracting the “external storage network” portions from the “control node” leaves us with the ultra-narrow structure it advances newly on appeal.

We agree with Cisco that Egenera cannot now seek a much narrower construction on appeal. *Digital-Vending Servs. Int'l, LLC v. Univ. of Phoenix, Inc.*, 672 F.3d 1270, 1273 (Fed. Cir. 2012) (“[A] party may not, as a general rule, change the scope of its claim construction on appeal.”). At any rate, we also find the district court’s and Cisco’s reasoning persuasive on the merits. The components of the tripartite structure—the virtual LAN server, virtual LAN proxy, and physical LAN driver—function in concert to modify messages to transmit to the external communications network. *See Claim Construction Decision*, 2018 WL 717342, at *7; ’430 patent col. 18 ll. 53–58, fig. 3B; Appellee’s Br. 72–74.

Accordingly, we affirm the claim construction order.

II

Next we turn to Egenera’s contention that the district court erred in applying judicial estoppel, thereby preventing correction of inventorship and invalidating its patent as a consequence.

A

First, we address whether Egenera *could* correct inventorship, even absent judicial estoppel.

The Constitution authorizes awarding patent exclusivity only to an inventor. U.S. CONST. art. I, § 8, cl. 8. And so courts have historically held that if a patent does not reflect its true inventorship, it is invalid. *See Pannu v. Iolab Corp.*, 155 F.3d 1344, 1349–50 (Fed. Cir. 1998) (collecting cases).

Inventorship is sometimes easy to determine. But sometimes it is complicated, as with complex projects involving many contributors at various times. Ultimately, inventorship is a legal conclusion premised on underlying factual findings, and one that depends on claim construction. *In re VerHoef*, 888 F.3d 1362, 1365 (Fed. Cir. 2018);

Trovan, Ltd. v. Sokymat SA, 299 F.3d 1292, 1302 (Fed. Cir. 2002). And like validity, inventorship is a claim-by-claim question. *Trovan*, 299 F.3d at 1302. Accordingly, who should be listed on the face of a patent may vary depending on what, exactly, is claimed and what, exactly, a court determines the claim scope to be.

The Patent Act allows a listing of inventors to be corrected either upon petition to the Director, *see* 35 U.S.C. § 256(a), or upon court order, *see* § 256(b). Our precedent recognizes that a patent cannot be invalidated if inventorship can be corrected instead. *Pannu*, 155 F.3d at 1350. The statutory text recognizes this too:

The *error* of omitting inventors or naming persons who are not inventors *shall not invalidate* the patent in which such error occurred if it can be corrected as provided in this section.

35 U.S.C. § 256(b) (emphases added). Section 256 applies if “through error a person is named . . . as the inventor, or through error an inventor is not named.” § 256(a).

As previously noted, the inventorship question involved Egenera’s attempt to add back an inventor, Mr. Schulter, who had previously been removed alongside the IPR. The district court declared in a footnote that Mr. Schulter’s removal by petition was therefore “a considered act that is unlikely to qualify as an omission ‘through error.’” *Judicial Estoppel Decision*, 348 F. Supp. 3d at 102 n.1. Cisco agrees, arguing that Egenera’s petition was a “tactical ploy” rather than a “reasonable, but mistaken, effort to get inventorship right.” Appellee’s Br. 27–30 (arguing that “error” requires a “good-faith mistake”). We note that although the district court declined to credit Egenera’s witnesses’ accounts of conception, it also declined to find inequitable conduct on these facts, despite being urged by Cisco to do so. *See Judicial Estoppel Decision*, 348 F. Supp. 3d at 101; *Invalidity Decision*, 379 F. Supp. 3d at 129.

Our precedent provides that “error” in § 256 includes “all varieties of mistakes—honest and dishonest”—rather than only unintentional inaccuracy. *Stark v. Advanced Magnetics, Inc.*, 119 F.3d 1551, 1554–56 (Fed. Cir. 1997).³ That is, *Stark* expressly construed “error” to “embrace more than simply honest mistakes.” *Id.* at 1554. *Stark*’s broad interpretation was intended to “harmonize[] well with the title 35 policy of seeking to reward the actual inventors of technological advances.” *Id.* Indeed, § 256 is a savings provision, functioning to prevent invalidation when correction is available. It is the inequitable-conduct rules that provide a safety valve in the event of deceit. *Id.* at 1555–56.

Cisco invites us to sidestep *Stark* because the AIA has since amended § 256. Previously, § 256 contained an additional requirement that the “error” of omitting an inventor occurred without “deceptive intention” on the inventor’s part. The scope of “error,” standing alone, was therefore

³ Reissue under 35 U.S.C. § 251 also requires “error,” and our case law there is consistent with our case law on § 256. *See, e.g., Fleming v. Escort Inc.*, 774 F.3d 1371, 1380 (Fed. Cir. 2014) (“Errors are not limited to slips of the pen but encompass—and most often are—deliberate drafting choices. Not all choices qualify . . .” (citation omitted)); *id.* (stating that error includes “deficient understandings” and choices that rest on “cognizable false or deficient understanding of fact or law” but not simply a “now-regretted choice”); *In re Dinsmore*, 757 F.3d 1343, 1347–48 (Fed. Cir. 2014); *In re Rosuvastatin Calcium Pat. Litig.*, 703 F.3d 511, 522–24 (Fed. Cir. 2012) (applying pre-AIA language and including deliberate actions) (collecting cases); *In re Amos*, 953 F.2d 613, 616 (Fed. Cir. 1991) (noting that error includes attorney’s mistake in understanding claim scope, “one of the most common sources of defects” (quoting *In re Wilder*, 736 F.2d 1516, 1519 (Fed. Cir. 1984))).

broad enough to otherwise include acts amounting to “deceptive intention”—that is, intentional inaccuracy. *See Stark*, 119 F.3d at 1554. With the AIA, “without . . . deceptive intention” was struck from that section. *See AIA*, Pub. L. No. 112-29, § 20(f)(1)(B), 125 Stat. 284, 334 (2011). The essence of Cisco’s position is that when Congress removed this restrictive language that excluded intentional inaccuracy *in certain cases*, it somehow narrowed the meaning of “error” to exclude intentional inaccuracy *entirely*. Appellee’s Br. 30. Cisco argues that Congress’s removal of this language was meant to harmonize “error” with what Cisco views as its plain meaning—one that excludes intentional inaccuracy. We had not yet addressed the impact of the AIA on the holding of *Stark*. *See, e.g., CODA Dev. S.R.O. v. Goodyear Tire & Rubber Co.*, 916 F.3d 1350, 1358 n.6 (Fed. Cir. 2019). But we now reject Cisco’s proposed interpretation because it is contrary to the text of § 256, the structure of the AIA,⁴ and the AIA’s legislative history.⁵ We hold that the AIA did not narrow the meaning of

⁴ For instance, through the AIA, deceptive-intention language was removed from the reissue provision, 35 U.S.C. § 251, as well as the analogue of § 256 that applies to patent applications, 35 U.S.C. § 116. *See AIA* § 20(a)(3)(B), (f)(1)(B), 125 Stat. at 333–34. The § 102(f) improper-inventorship invalidity provision was also removed. *AIA* § 3(b)(1), 125 Stat. at 285–86. And newly established derivation proceedings provide for correction of named inventors. *AIA* § 3(i), 125 Stat. at 289–90 (codified at 35 U.S.C. § 135(b)).

⁵ *See, e.g.*, 157 Cong. Rec. S1378 (daily ed. Mar. 8, 2011) (statement of Sen. Kyl) (“Eliminating the various deceptive-intent requirements moves the U.S. patent system away from the 19th century model that focused on the patent owner’s subjective intent, and towards a more objective-evidence-based system that will be much cheaper to litigate and more efficient to administer.”).

“error.” Accordingly, § 256 does not exclude “considered acts,” or even “deceptive intention,” from the meaning of “error.” *Cf. Judicial Estoppel Decision*, 348 F. Supp. 3d at 102 n.1. “Error” is simply the incorrect listing of inventors.

Egenera asserted in its inventorship petition to the PTO, concurrent with the IPR, that Mr. Schulter was incorrectly listed as an inventor. At the time, no one had argued that “logic to modify” was a means-plus-function term. Indeed, it presumptively was not. And Egenera opposed such a construction when Cisco later advanced it; likewise, its position that Mr. Schulter was not an inventor was seemingly consistent with its preferred construction. But the court rejected Egenera’s construction in a way that also illuminated Mr. Schulter’s necessary presence as an inventor. After a three-day trial, and this appeal, the claim-construction and inventorship questions have at last been resolved. Because of these legal determinations, in retrospect, Egenera’s assertion in its inventorship petition was incorrect: Mr. Schulter *was* an inventor. According, we conclude that Mr. Schulter’s omission was “error.”

B

Next we turn to judicial estoppel.⁶ As noted, the district court here concluded that Egenera was judicially estopped from adding Mr. Schulter’s name back to the patent after it held a trial establishing him to be an inventor—thereby invalidating the patent for improper inventorship.

⁶ Cisco contends that Egenera waived any argument against judicial estoppel. Appellee’s Br. 31. Regardless, whether to apply the waiver rule is discretionary. Here, there has been complete briefing and argument on the judicial estoppel issue. *See Automated Merch. Sys., Inc. v. Lee*, 782 F.3d 1376, 1379–80 (Fed. Cir. 2015). To apply waiver would not serve judicial economy or promote fairness, and so we address the merits.

As an initial matter, Egenera insists that judicial estoppel can *never* prevent § 256 from saving a patent’s validity. Appellant’s Br. 33–36; *see* Oral Arg. at 00:40–58, No. 19-2015, <http://oralarguments.cafc.uscourts.gov/default.aspx?fl=19-2015.mp3>. We need not decide that issue, however, because in this case the criteria for judicial estoppel were not met.

For questions of judicial estoppel, we apply the law of the regional circuit—here the First Circuit. *Akamai Techs., Inc. v. Limelight Networks, Inc.*, 805 F.3d 1368, 1374 (Fed. Cir. 2015). The legal effect of representations to the PTO and statutory interpretation of the Patent Act, however, are issues of Federal Circuit law. *See Endo Pharm. Inc. v. Teva Pharm. USA, Inc.*, 919 F.3d 1347, 1352 (Fed. Cir. 2019). Under First Circuit law, we review a district court’s application of judicial estoppel for abuse of discretion. *Akamai*, 805 F.3d at 1374 (citing *Knowlton v. Shaw*, 704 F.3d 1, 9–10 (1st Cir. 2013)). We accept underlying findings of fact unless they are clearly erroneous and review the resolution of legal questions *de novo*. *Id.* The First Circuit “treat[s] a material mistake of law as a *per se* abuse of discretion.” *Perry v. Blum*, 629 F.3d 1, 8 (1st Cir. 2010).

Judicial estoppel is an equitable doctrine that prevents a litigant from taking a litigation position inconsistent with one successfully asserted in an earlier court proceeding. *See id.* “The purpose of the doctrine is to protect the integrity of the judicial process.” *Id.* Although the “contours of judicial estoppel are hazy,” and its application is case-dependent, the First Circuit applies the *New Hampshire* factors. *RFF Family P’ship v. Ross*, 814 F.3d 520, 527–28 (1st Cir. 2016) (Souter, J., sitting by designation). Accordingly, a court examines (1) whether a party’s earlier and later positions are “clearly inconsistent”—that is, “mutually exclusive”; (2) whether the party “succeeded in persuading a court to accept” the earlier position; and (3) whether the party would “derive an unfair advantage or

impose an unfair detriment” on the other side if not estopped. *New Hampshire v. Maine*, 532 U.S. 742, 750–51 (2001).

We address the *New Hampshire* factors in turn.

1

First, Egenera advanced no “clearly inconsistent” positions.

To be “clearly inconsistent,” positions must be “mutually exclusive” and “directly inconsistent.” *RFF*, 814 F.3d at 528 (quoting *Alt. Sys. Concepts, Inc. v. Synopsys, Inc.*, 374 F.3d 23, 33 (1st Cir. 2004)).

In its § 256(a) petition, Egenera asked the PTO as a matter of formality “to delete Peter Schulter as an inventor of the invention being claimed.” J.A. 9367; *see also* 37 C.F.R. § 1.324; MPEP § 1481.02 (9th ed. Rev 10.2019, June 2020). Cisco argues that the “clearly inconsistent positions” were the two contrary uses of § 256.⁷ *See* Oral Arg. at 19:05–25, 26:29–38. Here, of course, in light of the district court’s claim construction and accompanying inventorship determination, Egenera is asking the district court to add Mr. Schulter back as an inventor. The district court concluded that “Egenera’s suggestion that Schulter may be relisted as an inventor as circumstances may dictate” was clearly inconsistent with its “September 2017 petition . . . that Schulter’s name was erroneously listed.” *Judicial Estoppel Decision*, 348 F. Supp. 3d at 102. This was incorrect.

⁷ If Cisco’s argument were accepted, it is hard to see how *any* inventorship correction could occur under § 256. By definition, a request to change inventorship would be inconsistent with the “position” taken at the outset of prosecution, in which inventor names are submitted with the application. And serial petitions would be impossible.

We do not think that multiple corrections under § 256 are per se “mutually exclusive.” In any event, the district court’s intervening claim-construction and inventorship determinations further justify any seeming inconsistency. *Cf. Biomedical Pat. Mgmt. Corp. v. Cal. Dep’t of Health Servs.*, 505 F.3d 1328, 1341–42 (Fed. Cir. 2007) (noting that “inconsistency” in the judicial estoppel context “is excused by an intervening change in the law”); *see generally* 18B Wright & Miller, *Federal Practice & Procedure* § 4477.3 (2d ed., Apr. 2020 update).

Inventorship, a complex legal conclusion, can depend on claim construction. Here, the underlying presumption was that Egenera’s claim terms, lacking “means,” were not means-plus-function. Egenera’s inventorship petition was consistent with that presumption. Indeed, it may well be that Mr. Schulter would not be an inventor under Egenera’s preferred construction; but inventorship under that claim construction was not decided. And Egenera consistently protested the means-plus-function construction both at the district court and on appeal—a construction that the inventorship question was directly predicated on. Therefore, once those issues were decided, it was entirely consistent for Egenera to request an accompanying formal correction of inventorship. Accordingly, at least due to the intervening claim construction, it was not “mutually exclusive,” as judicial estoppel requires, to again request formal correction of inventorship.

The district court thus erred in discerning “clearly inconsistent” positions.

2

Second, Egenera did not succeed in persuading a court or court-like tribunal to accept its first position.

“Acceptance’ in this context is a term of art.” *Perry*, 629 F.3d at 11. That is, “a party need not show that the earlier representation led to a favorable ruling on the

merits . . . but must show that the court adopted and relied on the represented position either in a preliminary matter or as part of a final disposition.” *Id.* And “[t]he showing of judicial acceptance must be a strong one.” *Id.* In this factor, we ask whether the earlier tribunal’s acceptance implicated the “truth-seeking function of the court.” *Id.* at 11 (quoting *Teledyne Indus., Inc. v. NLRB*, 911 F.2d 1214, 1218 (6th Cir. 1990)). This requirement aligns with the doctrine’s purpose of “safeguard[ing] the integrity of the courts by preventing parties from improperly manipulating the machinery of the judicial system.” *New Hampshire*, 532 U.S. at 750.

The district court concluded that “[t]he PTO accepted these representations”—referring to the inventorship petition. *Judicial Estoppel Decision*, 348 F. Supp. 3d at 102. As an initial matter, the inventorship petition contained no underlying statements of fact—simply statements that Mr. Schulter’s listing was erroneous and that all the co-listed inventors agreed or did not disagree. *See* J.A. 9367–80. The PTO did not cast these statements into the crucible of examination. Rather, it agreed that all the signatures and fees were in order. *See* J.A. 9388; MPEP § 1481.02.

Egenera contends that its statements in its petition “did not involve the judicial process necessary for judicial estoppel.” Appellant’s Br. 42. Instead, the § 256 petition process is “ministerial” and “does not involve any tribunal, judicial officer, or substantive analysis.” *Id.* Cisco replies that Egenera undisputedly “persuaded” the PTO that “Schulter was not an inventor.” Appellee’s Br. 44.

Under 37 C.F.R. § 1.324(b), the PTO examines a request only for the presence of supporting statements and the required fee. *See also* MPEP § 1481.02; J.A. 9388. No substantive examination occurs, and the PTO does not consider the substantive adequacy of the petition. Cisco argues that the First Circuit has rejected a “ministerial”

exception. But in explanation, Cisco points out that unexamined identification of assets during bankruptcy proceedings can ground judicial estoppel in a later bankruptcy proceeding. *See* Appellee’s Br. 45 (citing *Guay v. Burack*, 677 F.3d 10, 17 (1st Cir. 2012)). We find Cisco’s arguments unpersuasive: bankruptcy schedules occur in the context of a bankruptcy *court*—they are specific representations of fact before a tribunal.⁸ And as Egenera argues, Cisco’s chosen administrative judicial-estoppel precedents involve “inconsistent statements about an *objective fact*, such as the existence of bankruptcy assets or a claimed disability” rather than “context-related legal conclusions.” Reply Br. 19.⁹

Accordingly, even though we agree that judicial estoppel can occur in an administrative tribunal,¹⁰ we disagree that a § 256 petition, without more, counts as “persuasion” of a “court” for judicial-estoppel purposes.

⁸ Cisco also points to out-of-circuit applications of judicial estoppel related to the Social Security Administration’s acceptance of statements in a disability-insurance application. *See* Appellee’s Br. 46 n.3. Again, those cases are not only not binding but also unpersuasive, as they involve inconsistent statements about objective facts.

⁹ “[J]udicial estoppel arises only from a position taken in an adjudicatory proceeding. Inconsistent positions taken in other contexts must be measured by other theories.” *Federal Practice & Procedure* § 4477; *see also id.* § 4477.2 (“A position asserted before a government official in nonadjudicatory proceedings . . . should not support ‘judicial’ estoppel.”).

¹⁰ *See Trs. v. United States*, 593 F.3d 1346, 1354 (Fed. Cir. 2010) (“Judicial estoppel applies just as much when one of the *tribunals* is an administrative agency as it does when both tribunals are courts.” (emphasis added)).

This determination is narrow. We do not hold that judicial estoppel cannot apply to statements made during substantive prosecution, *ex parte* reexamination, or other quasi-adjudicatory proceedings—an issue not before us. And we do not go so far as to say that *other* theories of estoppel cannot apply to ministerial filings or representations before the PTO. But *judicial* estoppel cannot be stretched beyond persuading a tribunal, and it does not apply here.

3

Third, Egenera would gain no unfair advantage, and Cisco would suffer no unfair prejudice, if judicial estoppel were not applied.

The focus of this inquiry is on whether *not applying estoppel* would result in unfair advantage or prejudice. See *New Hampshire*, 532 U.S. at 751 (“[Courts ask] whether the party seeking to assert an inconsistent position would derive an unfair advantage . . . if not estopped.”); *RFF*, 814 F.3d at 528.

Egenera argues that it would obtain no unfair advantage by correcting inventorship in conformance with the district court’s inventorship determination. Appellant’s Br. 45–46. The petition was not granted until after the Board denied institution of the IPR on the merits. Egenera points out that the petition did not affect the IPR, and correction would simply “foster resolution of this case on the merits.” Appellant’s Br. 45–46. Cisco responds that, as the district court noted, Egenera’s disavowal of Mr. Schulter’s inventorship enabled it to argue for an earlier priority date to bolster its IPR and litigation position. Appellee’s Br. 47; *Judicial Estoppel Decision*, 348 F. Supp. 3d at 101–02. But in any event, it ended up not making a difference. The Board considered Cisco’s prior art without addressing Egenera’s priority arguments. And Cisco fails to explain how, even if there *would* be an

advantage conferred on Egenera by failure to estop, that advantage would be “unfair” under these facts.

Things might be different had Egenera succeeded in swearing behind the prior art. We do not go so far as to declare that there would be no potential for judicial estoppel had the Board fully considered and adopted Egenera’s swearing-behind arguments. But that would be estoppel on the basis of a prior representation *to a tribunal* (i.e., the Board). And both prejudice and inconsistency would be clear: there would be the potential of two judicial decisions predicated on opposite inventorship statuses. But that is not this case. Here, there would be no unfair prejudice in refusing to estop. The district court did not identify any. *See Judicial Estoppel Decision*, 348 F. Supp. 3d at 101–02. Cisco identified none in its brief, nor when pressed at oral argument. *See Oral Arg.* at 15:30–17:34.

Cisco dismisses this prong of the *New Hampshire* factors as purely optional under First Circuit law, arguing only that it is “enough that Egenera took ‘contradictory’ positions ‘*in search of legal advantage.*” Appellee’s Br. 47, 49–50 (citing *Alt. Sys. Concepts*, 374 F.3d at 33). We disagree with Cisco’s reading of *Alternative System Concepts*, which would collapse the first and third prongs into one. And we decline to ignore abundant First Circuit precedent signifying the importance of this factor. *E.g.*, *RFF*, 814 F.3d at 528; *Perry*, 629 F.3d at 8–9.

Accordingly, there would be no unfair advantage or unfair prejudice in refusing to estop Egenera.

4

The district court legally erred as to each *New Hampshire* factor. We therefore hold that the district court abused its discretion by applying judicial estoppel.

CONCLUSION

We have considered the parties' remaining arguments but find them unpersuasive. For the foregoing reasons, we affirm the district court's claim construction but vacate the district court's invalidity judgment and the accompanying cost award. We remand for further proceedings.

**AFFIRMED-IN-PART, VACATED-IN-PART, AND
REMANDED**

COSTS

The parties shall bear their own costs.