United States Court of Appeals for the Federal Circuit

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VIRNETX INC.,
Appellant

v.

THE MANGROVE PARTNERS MASTER FUND, LTD., APPLE INC.,
Appellees

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2017-1368

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Appeal from the United States Patent and Trademark Office, Patent Trial and Appeal Board in No. IPR2015-01046.

VIRNETX INC.,
Appellant

v.

THE MANGROVE PARTNERS MASTER FUND, LTD., APPLE INC., BLACK SWAMP IP, LLC,
Appellees

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2017-1383

Appeal from the United States Patent and Trademark Office, Patent Trial and Appeal Board in No. IPR2015-01047.

Decided: July 8, 2019

NAVEEN MODI, Paul Hastings LLP, Washington, DC, argued for appellant. Also represented by STEPHEN BLAKE KINNAIRD, JOSEPH PALYS, IGOR VICTOR TIMOFEYEV, MICHAEL WOLFE, DANIEL ZEILBERGER.

MARK CHRISTOPHER FLEMING, Wilmer Cutler Pickering Hale and Dorr LLP, Boston, MA, argued for all appellees. Appellee Apple Inc. also represented by WILLIAM F. LEE, LAUREN B. FLETCHER, DOMINIC E. MASSA; THOMAS GREGORY SPRANKLING, Palo Alto, CA; BRITTANY BLUEITT AMADI, Washington, DC.

JAMES T. BAILEY, Law Office of James T. Bailey, New York, NY, for appellee Mangrove Partners Master Fund, Ltd.

AMEDEO F. FERRARO, Martin & Ferraro, LLP, Los Angeles, CA, for appellee Black Swamp IP, LLC. Also represented by WESLEY MEINERDING, Hartville, OH.

NANCY JO LINCK, Rothwell, Figg, Ernst & Manbeck, P.C., Washington, DC, for amici curiae Biotechnology Innovation Organization, Pharmaceutical Research and Manufacturers of America. Amicus curiae Biotechnology Innovation Organization also represented by MELISSA A. BRAND, HANSJORG SAUER, Biotechnology Innovation Organization, Washington, DC. Amicus curiae Pharmaceutical Research and Manufacturers of America also

represented by DAVID EVAN KORN, Pharmaceutical Research and Manufacturers Association of America, Washington, DC.

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

MOORE, *Circuit Judge*.

VirnetX Inc. appeals two inter partes review decisions holding claims 1, 3–4, 7–8, 10 and 12 of U.S. Patent No. 6,502,135 and claims 1–2, 6–8, and 12–14 of U.S. Patent No. 7,490,151 unpatentable. VirnetX raises multiple procedural challenges, including that the Patent Trial and Appeal Board ("Board") erred by joining Apple Inc. to the proceedings, that substantial evidence does not support the Board's finding that The Mangrove Partners Master Fund, Ltd. ("Mangrove"), named all real parties in interest, and that the Board abused its discretion in denying its request for authorization to file a motion for additional discovery. VirnetX also challenges the merits of the Board's decision holding the claims unpatentable. For the following reasons, we vacate and remand.

BACKGROUND

VirnetX is the owner of the '135 and '151 patents ("Challenged Patents"). These patents have been the subject of ongoing litigation between VirnetX and Apple Inc. and multiple petitions for inter partes review. VirnetX served Apple with a complaint alleging infringement of claims of the Challenged Patents in 2010. In June 2013, Apple filed petitions for inter partes review of the Challenged Patents, which the Board denied as time-barred under 35 U.S.C. § 315(b). *E.g., Apple Inc. v. VirnetX Inc.,* IPR2013-00354, Paper 20 at 5 (P.T.A.B. Dec. 13, 2013). In November 2013, RPX Corporation petitioned for inter partes review of the Challenged Patents. The Board again denied institution as time-barred based on evidence that

Apple was a real party in interest. *E.g.*, *RPX Corp. v. Vir-netX Inc.*, IPR2014-00171, Paper 57 at 3. In April 2015, Mangrove petitioned for inter partes review of the Challenged Patents, and the Board instituted review. Following institution, Apple filed its own petitions asserting the same grounds of unpatentability as Mangrove's petitions along with requests for joinder to the instituted proceedings. The Board granted Apple's requests with certain conditions to Apple's involvement.[1]

Each challenge to claims of the Challenged Patents was based at least in part on a 1996 article by Kiuchi, et al., titled "The Development of a Secure, Closed HTTP-Based Network on the Internet" ("Kiuchi"). For the '151 patent, the Board held that claims 1–2, 6–8, and 12–14 were anticipated by Kiuchi and rendered obvious by Kiuchi in view of other prior art references not at issue. For the '135 patent, it held that claims 1, 3–4, 7–8, 10, and 12 were anticipated by Kiuchi and claim 8 was rendered obvious by Kiuchi in view of another prior art reference not at issue. VirnetX timely filed notices of appeal, and the appeals were consolidated. We have jurisdiction pursuant to 28 U.S.C. § 1295(a)(4)(A).

DISCUSSION

I. Procedural Challenges

A

We review questions of statutory interpretation de novo. *Mudge v. United States*, 308 F.3d 1220, 1224 (Fed. Cir. 2002). We must "hold unlawful and set aside agency action, findings, and conclusions found to be in excess of statutory jurisdiction, authority, or limitations, or short of statutory right." 5 U.S.C. § 706(2)(C). In making this

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[1] Black Swamp IP, LLC, also filed a petition with respect to the '151 patent and was joined to that proceeding.

determination we must take due account of prejudicial error. *Id.*

VirnetX argues that Apple's joinder to these proceedings violates 35 U.S.C. § 315(b). The first sentence of this provision states:

> An inter partes review may not be instituted if the petition requesting the proceeding is filed more than 1 year after the date on which the petitioner, real party in interest, or privy of the petitioner is served with a complaint alleging infringement of the patent.

It is undisputed that Apple was served with a complaint alleging infringement of the Challenged Patents more than a year before the filing date. But the second sentence of § 315(b) includes an exception: "The time limitation set forth in the preceding sentence shall not apply to a request for joinder under subsection (c)." Section 315(c) states:

> If the Director institutes an inter partes review, the Director, in his or her discretion, may join as a party to that inter partes review any person who properly files a petition under section 311 that the Director, after receiving a preliminary response under section 313 or the expiration of the time for filing such a response, determines warrants the institution of an inter partes review under section 314.

Under the Patent and Trademark Office's ("PTO") regulation, an otherwise time-barred party can file a petition accompanied by a request for joinder after inter partes review is instituted to avoid the one-year bar. 37 C.F.R. § 42.122(b). That is what occurred here.

We decline to decide whether Apple's joinder was permitted under § 315(b)–(c) because VirnetX has not demonstrated that it was prejudiced by Apple's involvement. Apple's petitions did not add any issues to the proceedings.

J.A. 1983 (the Board stating that the grounds on which review was instituted "are unchanged and no other grounds are included in the joined proceeding"); J.A. 3859 (same). They brought the same challenges to the Challenged Patents as Mangrove's petitions. In granting Apple's request for joinder, the Board imposed restrictions on Apple's involvement, stating that Apple must adhere to the existing schedule, must consolidate its filings with Mangrove, is bound by any discovery agreements between Mangrove and VirnetX, and is not entitled to any additional discovery. J.A. 1982–83; J.A. 3858. It gave Mangrove the authority to designate the attorneys to depose witnesses and present at the oral hearing. At this stage in the proceedings, we see no prejudice in Apple's continued involvement, but we leave open the question of whether prejudice could arise later.

B

"A petition filed under section 311 may be considered only if . . . the petition identifies all real parties in interest." 35 U.S.C. § 312(a)(2). The real-party-in-interest inquiry at common law, which defines the meaning of the term in § 312(a)(2), "seeks to ascertain who, from a practical and equitable standpoint, will benefit from the redress that the chosen tribunal might provide." *Applications in Internet Time, LLC v. RPX Corp.*, 897 F.3d 1336, 1349 (Fed. Cir. 2018) ("*AIT*"). One factor relevant to whether a third party is a real party in interest, which the Board focused on here, is whether it "exercised or could have exercised control over a party's participation in a proceeding." Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,759 (Aug. 14, 2012). A "petitioner's initial identification of the real parties in interest should be accepted unless and until disputed by a patent owner." *Worlds Inc. v. Bungie, Inc.*, 903 F.3d 1237, 1243 (Fed. Cir. 2018). To dispute it, the patent owner "must produce *some* evidence that tends to show that a particular third party should be named a real party in interest." *Id.* at 1244. Whether a third party is a real party in

interest is a question of fact we review for substantial evidence. *See AIT*, 897 F.3d at 1356.

VirnetX argues the Board's finding that Mangrove identified all real parties in interest is not supported by substantial evidence. VirnetX argues Mangrove failed to name Mangrove Partners Hedge Fund ("Mangrove Partners"), which, according to VirnetX, has complete discretion over the investment of Mangrove's assets and entered an agreement with Mangrove that gives Mangrove Partners authority to act on behalf of Mangrove in certain situations. It points to the fact that Mangrove Partners wired money to Mangrove's attorneys to pay the filing fee for its petitions. Based on this evidence, VirnetX asserts that Mangrove Partners exercised or could have exercised control over Mangrove's participation in the proceedings. It asks that we vacate and remand to the Board with instructions to terminate.

Petitioners contend that we lack jurisdiction to review this issue under § 314(d), which states that the decision to institute is "final and nonappealable." "The scope of review of a final written decision and the limit on that review imposed by the appeal bar of § 314(d) are not jurisdictional issues." *Mayne Pharma Int'l Pty. v. Merck Sharp & Dohme Corp*, No. 2018-1593, 2019 WL 2553514, at *4 (Fed. Cir. June 21, 2019). In *Mayne*, we held that we did not need to decide the issue of appealability because the Board did not commit reversible error. *Id.* at *5. For the same reason here, we need not decide whether this issue is appealable.

Substantial evidence supports the Board's finding that Mangrove Partners is not a real party in interest. Mangrove Partners is Mangrove's investment manager and has discretionary authority to manage the assets in its fund. J.A. 5031, 5045. The agreement between the two entities states that Mangrove Partners "agrees to act as the investment manager of [Mangrove] and serve as [Mangrove's] agent and attorney-in-fact to invest and reinvest all of [its]

assets." J.A. 7045. It states that Mangrove Partners "shall have no authority to act for, represent, bind or obligate [Mangrove] except as provided." J.A. 7046. Mangrove Partners' specified authority to act on behalf of Mangrove relates to its role in investing Mangrove's assets. The fact that Mangrove Partners transmitted some of Mangrove's money that it was managing to pay for these petitions is not evidence that Mangrove Partners exercised any control over these proceedings. This evidence supports the Board's finding that Mangrove Partners did not need to be named as a real party in interest.

Even if we agreed that Mangrove Partners was a real party in interest, there would be no reason to terminate these proceedings as VirnetX requests. We have stated that if the petition fails to identify a real party in interest, the Director may allow the petitioner to cure its noncompliance with § 312(a)(2), provided that doing so does not run afoul of § 315(b). *Wi-Fi One, LLC v. Broadcom Corp.*, 878 F.3d 1364, 1374 n.9 (Fed. Cir. 2018) (en banc). There is no evidence in the record that Mangrove Partners is time-barred under § 315(b).

C

To file a motion before the Board, a party generally must first obtain authorization from the Board. 37 C.F.R. § 42.20(b). But "a party may move for additional discovery" when parties fail to agree to additional discovery. 37 C.F.R. § 42.51(B)(2)(i). "The moving party must show that such additional discovery is in the interests of justice." *Id.* The Board has listed five factors important in determining whether discovery is in the interest of justice, including that there be more than a "mere possibility of finding something useful." *Garmin Int'l, Inc. v. Cuozzo Speed Techs. LLC*, IPR2012-00001, Paper 26 at 6 (P.T.A.B. Mar. 5, 2013) (precedential). We review a denial of a motion for additional discovery for abuse of discretion. *Wi-Fi One*, 887 F.3d at 1339.

While the proceedings were pending, VirnetX learned that Mangrove gained equity in RPX, an entity that purports to help "companies mitigate and manage patent risk and expense by serving as an intermediary through which they can participate more efficiently in the patent market." J.A. 7070. After institution, Mangrove disclosed that it owned about five percent of RPX, which made it RPX's fifth largest shareholder. J.A. 7213, 7220. In a March 2016 letter, Mangrove stated that it recently met with management from RPX. J.A. 7221. VirnetX requested authorization to move for additional discovery to explore the relationship between Mangrove and RPX, which had previously filed time-barred petitions because Apple was found to be a real party in interest. During a conference call, VirnetX conveyed this evidence to the Board and asserted that Mangrove's attorney had only previously represented RPX. J.A. 6246, 6251–52. VirnetX believed that, through RPX, Apple was in some way involved in the petitions. The Board did not let VirnetX move for additional discovery because the alleged facts "d[id] not show more than a mere possibility that something useful [would] be discovered and [was] therefore insufficient to show beyond mere speculation that discovery would be in the interests of justice." J.A. 448; J.A. 2243. The Board then rejected VirnetX's contention that RPX was a real party in interest for lack of evidence. J.A. 45; J.A. 84.

VirnetX argues the Board abused its discretion by refusing to allow VirnetX to even file a motion for additional discovery into the connection between Mangrove and RPX. Petitioners do not respond to this argument, but rather argue that the Board did not abuse its discretion when it concluded that additional discovery was not warranted. We agree with VirnetX.

While the PTO's regulations generally require prior authorization before filing any motion, 37 C.F.R. § 42.20(b), they also expressly give a party authorization to move for additional discovery, 37 C.F.R. § 42.51(b)(2)(i). This

provision states that "[w]here the parties fail to agree [to additional discovery], a party may move for additional discovery." *Id.* VirnetX must show that such discovery is in the interests of justice for that motion to be granted. *Id.* The Board, however, denied that VirnetX had made such a showing without ever permitting a motion allowing VirnetX to show the evidence that it had and to state the discovery sought. Because § 42.51(b)(2)(i) authorizes a motion for additional discovery, the Board abused its discretion in denying VirnetX the ability to even file a motion. We do not express a view on the merits of such a motion should VirnetX file one on remand.

II. Merits

We review the Board's legal determinations de novo and its underlying factual findings for substantial evidence. *Belden Inc. v. Berk-Tek LLC*, 805 F.3d 1064, 1073 (Fed. Cir. 2013). Anticipation is a question of fact. *Husky Injection Molding Sys. Ltd. v. Athena Automation Ltd.*, 838 F.3d 1236, 1248 (Fed. Cir. 2016). "A prior art document may anticipate a claim if it describes every element of the claimed invention, either expressly or inherently." *Id.* Obviousness is a question of law based on underlying facts. *Belden*, 805 F.3d at 1073.

The Challenged Patents share a substantially identical specification.[2] They are directed to establishing secure communications over the Internet. Specifically, they address problems related to communications involving conventional domain name servers ("DNS"). The specification states that, conventionally, when a user via a client application enters the name of a web site, a request is sent to a DNS, which returns the IP address associated with that

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[2] The application that issued as the '151 patent was a divisional application of the application that issued as the '135 patent.

web site to the client application. '151 patent at 36:61–37:10. The client application then uses that IP address to communicate with the web site. *Id.* According to the specification, "nefarious listeners on the Internet could intercept" the DNS request and "learn what IP addresses the user was contacting." *Id.* at 37:11–14.

To solve this problem, the specification discloses using a DNS proxy to intercept all DNS lookup functions from the client and determine whether access to a secure site has been requested. *Id.* at 37:60–62. If so, the DNS proxy transmits a message to a gatekeeper requesting that a virtual private network ("VPN") be created between the user computer and the secure site. *Id.* at 37:66–38:2. A secure VPN is then established. If the client requests access to an unsecure web site, the DNS proxy would pass through the request to a conventional DNS, which would be handled in the conventional manner. *Id.* at 38:12–16.

Kiuchi, the only prior art reference at issue on appeal, discloses using a closed HTTP-based network ("C-HTTP") to provide secure communications between a closed group of institutions on the Internet. Its system consists of five relevant elements: a user agent (also referred to as a client), a client-side proxy, a C-HTTP name server, a server-side proxy, and an origin server. The user agent and client-side proxy communicate behind one firewall, and the origin server and server-side proxy communicate behind another. When the user agent requests access to a host, the client-side proxy asks the C-HTTP name server whether it can communicate with that host. The C-HTTP name server checks whether the server-side proxy associated with that host is registered on the network and is permitted to accept the connection from the client-side proxy. If it determines the communication is not permitted, it returns an error code to the client-side proxy, which then acts as a typical DNS. If the communication is permitted, the C-HTTP name server sends the server-side proxy's information to the client-side proxy, which then sends a connection

request to the server-side proxy. The server-side proxy similarly communicates with the C-HTTP server to verify the request. Once verified, a connection between the client-side and server-side proxies is established, and communication occurs over a secure, encrypted protocol. All encryption and decryption occur at the proxies, and the user agent and origin server receive the relevant decrypted information from their respective proxies.

A. The '151 Patent

The parties treat claim 1 of the '151 patent as representative of the claims at issue involving that patent. It recites:

> A data processing device, comprising memory storing a domain name server (DNS) proxy module that intercepts DNS requests sent by a client and, for each intercepted DNS request, performs the steps of:
>
>> (i) determining whether the intercepted DNS request corresponds to a secure server;
>>
>> (ii) when the intercepted DNS request does not correspond to a secure server, forwarding the DNS request to a DNS function that returns an IP address of a nonsecure computer, and
>>
>> (iii) when the intercepted DNS request corresponds to a secure server, automatically initiating an encrypted channel between the client and the secure server.

1

VirnetX challenges the Board's finding that Kiuchi's C-HTTP name server performs the functions of the claimed DNS proxy module under the APA. According to VirnetX, Petitioners initially asserted that Kiuchi's client-side proxy

discloses the claimed DNS proxy module and then asserted in its reply that the combination of Kiuchi's client-side proxy and C-HTTP name server discloses this element. VirnetX argues it lacked notice and an opportunity to respond to the argument that the C-HTTP name server, alone, discloses this element.

The APA requires that the Board "timely inform the patent owner of the matters of fact and law asserted, give all interested parties the opportunity to submit and consider facts and arguments, and allow a party to submit rebuttal evidence as may be required for a full and true disclosure of the facts." *EmeraChem Holdings, LLC v. Volkswagen Grp. of Am., Inc.*, 859 F.3d 1341, 1348 (Fed. Cir. 2017) (internal quotation marks omitted). The Board did not violate the APA when it relied on Kiuchi's C-HTTP name server for the disclosure of the claimed DNS proxy module. Petitioners' reply argued that the combination of the client-side proxy and the C-HTTP name server and the C-HTTP name server alone perform the functions of the claimed DNS proxy module. J.A. 3235 (identifying two "scenarios," depending on whether the DNS request originates from the user agent or client-side proxy). After VirnetX argued to the Board that Petitioners' reply raised new arguments, the Board authorized VirnetX to file a sur-reply to respond to the arguments that it contended were improperly raised. J.A. 3454. The fact that VirnetX only responded to the combination mapping in its sur-reply does not mean the Board violated the APA in relying on an argument for which there was an adequate notice and opportunity to respond.

2

VirnetX argues that substantial evidence does not support the Board's finding that the C-HTTP name server performs all the claimed functions of the DNS proxy module. Specifically, it argues that the evidence relied on to support the finding that Kiuchi discloses "forwarding the DNS

request to a DNS function" "when the intercepted DNS request does not correspond to a secure server" relates to Kiuchi's client-side proxy, not the C-HTTP name server. Petitioners do not contest that this is what the evidence shows but argue that the Board relied on their argument that the combination of the client-side proxy and the C-HTTP name server perform the functions of the DNS proxy module.

Petitioners misread the Board's decision. While the Board confusingly states at different points that Kiuchi's user agent and client-side proxy correspond to the claimed "client," it never states that the combination of the client-side proxy and C-HTTP name server corresponds to the claimed DNS proxy module. The decision makes clear that the Board relied on only the C-HTTP name server to perform the functions of the DNS proxy module. J.A. 60 ("Petitioner argues that Kiuchi discloses a client (i.e., client-side proxy) that sends a request to a [DNS] proxy module (i.e., C-HTTP name server) that returns a corresponding IP address. We agree with Petitioner."); J.A. 62 ("Petitioner equates Kiuchi's 'C-HTTP name server' (and not the client-side proxy) with the claimed DNS proxy module."); J.A. 65–66 ("Petitioner equates Kiuchi's client-side proxy with the claimed 'client.'"); J.A. 86 (noting that the Board did not rely on the portion of Petitioners' reply arguing that the combination of the client-side proxy and C-HTTP name server corresponds to the DNS proxy module). The Board could not have found that the client-side proxy corresponds to the claimed "client" and is also a part of the DNS proxy module, as the claim makes clear that these are separate components.

Substantial evidence does not support the Board's finding that the C-HTTP name server performs the functions of the claimed DNS proxy module. The claims require that the DNS proxy module "forward[s] the DNS request to a DNS function that returns an IP address of a nonsecure computer" "when the intercepted DNS request does not

correspond to a secure server." That is not how Kiuchi's system works. Instead, if a connection between the client-side and server-side proxies is not permitted, the C-HTTP name server sends an error status to the client-side proxy. J.A. 3983. Upon receipt, the client-side proxy "performs DNS lookup, behaving like an ordinary HTTP/1.0 proxy." J.A. 3983. The C-HTTP name server does not forward a DNS request to a DNS function, but rather sends an error message back to what the Board relied on as the claimed "client."

3

VirnetX argues the Board erred by failing to resolve the claim construction dispute between the parties as to the meaning of "client." Below, VirnetX argued that a "client" should be construed as a "user's computer." J.A. 3123. Petitioners argued this term should mean "a device, computer, system, or program from which a data request to a server is generated." J.A. 3201. VirnetX argues that under its proposed construction, Kiuchi's client-side proxy is not a "client." Petitioners respond that the Board did not need to resolve this dispute because it made alternative findings that Kiuchi's user agent and client-side proxy are both clients under either proposed construction.

VirnetX also argues that the Board's anticipation finding is not supported by substantial evidence because it cites different components of Kiuchi as corresponding to the claimed "secure server." It points out that the Board first refers to Kiuchi's origin server as the claimed "secure server," then later refers to Kiuchi's server-side proxy as the same element. Petitioners respond that both are secure servers and this inconsistency is irrelevant because the Board discussed Kiuchi's origin server in the context of a limitation that does not recite a "secure server."

Anticipation requires that "every element and limitation of the claimed invention must be found in a single prior art reference, *arranged as in the claim*." *Brown v. 3M*, 265

F.3d 1349, 1351 (Fed. Cir. 2001) (emphasis added). The Board at different points confusingly relied on Kiuchi's user agent and client-side proxy as corresponding to the claimed "client" and Kiuchi's server-side proxy and origin server as corresponding to the claimed "secure server." J.A. 58–59 (referring to the formation of an encrypted channel "between the user agent (i.e., 'client') and origin server (i.e., 'the secure server')"); J.A. 61 (referring to the formation of "an encrypted channel that extends from the client-side proxy (i.e., 'client') and the server-side proxy (i.e., 'secure server')"). There is no question that these are different components in Kiuchi's system, and Petitioners do not contend otherwise. *See* J.A. 3984 (noting that "a client-side proxy forwards HTTP/1.0 requests from the user agent in encrypted form"); *id.* (noting that "a server-side proxy communicates with an origin server inside the firewall"). Instead, Petitioners characterize these as alternative findings. It is unclear to us that this is the case.

The claims require a DNS proxy module that intercepts a DNS request from a "client" and, when that request corresponds to a "secure server," automatically initiates an encrypted channel between "the client and the secure server." The Board's only reference to Kiuchi's user agent and origin server corresponding to the claimed "client" and "secure server," respectively, occurs when analyzing whether Kiuchi discloses the claimed "DNS request." The rest of its analysis refers to Kiuchi's client-side and server-side proxies for those claimed elements. There is no clear indication that these were meant to be alternative findings. If they were, the Board's analysis is lacking. It seems just as likely that the reference to Kiuchi's user agent and origin server was a typo, given its inconsistency with the rest of the Board's analysis, or that the Board intended to rely on combinations of components to satisfy the claimed "client" and "secure server." To the extent the Board intended to rely on different components in Kiuchi for the disclosure of all the claimed limitations attributed to the "client" or the

"secure server," its finding of anticipation is not supported by substantial evidence.

To the extent the Board intended to rely exclusively on Kiuchi's client-side proxy for the claimed "client," we agree with VirnetX that the Board erred in failing to resolve the claim construction dispute as to the meaning of "client." VirnetX's proposed construction of a "client" was a "user's computer." In its patent owner response, it argued that "[t]here is no question that Kiuchi's client-side proxy is not a user's computer. Kiuchi does not disclose any user associated with the client-side proxy . . . . In Kiuchi, the user's computer is the user agent, not the client-side proxy." J.A. 3041. The Board declined to explicitly construe "client" because, in its view, Kiuchi's client-side proxy is a client even under VirnetX's construction. But it only reached this determination by redefining VirnetX's proposed construction so that the client-side proxy is a "client" as long as it is associated with a user. After twisting VirnetX's proposed construction, the Board found that the client-side proxy meets this definition because it is "associated with" the user agent, which is "associated with" a user. J.A. 63.

VirnetX's proposed construction is a user's computer, not any device that is associated with a user, however indirectly. It was improper for the Board to take language out of context from the patent owner response and treat it as VirnetX's proposed construction, rather than analyzing the language of its proposed construction, which the patent owner response makes clear does not cover the client-side proxy.

4

Petitioners asserted various obviousness challenges based on Kiuchi in view of additional references. The Board did not consider the disclosures of these additional references because it did not identify any deficiencies of Kiuchi in its anticipation challenge. J.A. 67–68. The Board's obviousness conclusion thus suffers from the same

errors as its anticipation finding. We vacate and remand the Board's decision. On remand, the Board should consider Petitioners' obviousness challenges in light of this opinion.

B. The '135 Patent

The parties treat claim 1 of the '135 patent as representative of the claims at issue involving that patent. It recites:

> A method of transparently creating a virtual private network (VPN) between a client computer and a target computer, comprising the steps of:
>
>> (1) generating from the client computer a Domain Name Service (DNS) request that requests an IP address corresponding to a domain name associated with the target computer;
>>
>> (2) determining whether the DNS request transmitted in step (1) is requesting access to a secure web site; and
>>
>> (3) in response to determining that the DNS request in step (2) is requesting access to a secure target web site, automatically initiating the VPN between the client computer and the target computer.

1

VirnetX challenges the Board's alternative findings that Kiuchi's user agent and client-side proxy meet the limitations of the claimed "client computer." The Board's analysis that the client-side proxy satisfies this limitation is substantially similar to its analysis regarding the '151 patent that the client-side proxy meets the limitations of the claimed "client." As in that proceeding, VirnetX argued that a "client computer" should be construed as a "user's computer" and that Kiuchi's client-side proxy does not

meet this limitation. J.A. 1226–27. The Board again declined to construe "client computer," latching onto the same out-of-context language to find that the client-side proxy is "associated with" a user because it is associated with a user agent, which is associated with a user. J.A. 26–27. For the same reasons, the Board erred.

VirnetX argues that the Board's finding that the user agent also meets its construction of a "client computer" violates the APA. According to VirnetX, the Board relied on Kiuchi's client-side proxy for this limitation in its institution decision then changed theories midstream in its final written decision, in violation of *SAS Institute, Inc. v. ComplementSoft, LLC*, 825 F.3d 1341, 1351–52 (Fed. Cir. 2016), *rev'd on other grounds*, 138 S. Ct. 1348 (2018). We disagree.

An APA violation is premised on a lack of notice and an opportunity to respond. *See EmeraChem*, 859 F.3d at 1348. As VirnetX admitted in its patent owner response, Petitioners advanced alternative theories in their petitions, one of which was that the user agent meets the limitations of the "client computer." J.A. 1222 (stating that Petitioners "appear to advance two alternative theories"). Even if the Board's institution decision relied only on the client-side proxy for this limitation, that does not give rise to an APA violation when VirnetX was on notice that this theory was advanced by Petitioners. Moreover, the institution decision cites to the portion of the petition discussing this theory and only mentioned the client-side proxy as an "example" of what was argued in the petition. J.A. 403.

2

VirnetX argues the Board should have construed a "VPN between the client computer and the target computer" as requiring direct communication between the client computer and target computer. Its argument is premised on prosecution-history disclaimer. During inter partes reexamination of the '135 patent, VirnetX

responded to a rejection based on a prior art reference, Aventail. In that response, VirnetX argued:

> Aventail discloses a system in which a client on a public network transmits data to a SOCKS server via a singular, point-to-point SOCKS connection at the socket layer of the network architecture. The SOCKS server then relays that data to a target computer on a private network on which the SOCKS server also resides. All communications between the client and target stop and start at the intermediate SOCKS server. The client cannot open a connection with the target itself.

J.A. 6228 (internal citations omitted). As a result, "Aventail has not been shown to disclose a VPN because computers connected according to Aventail do not communicate directly with each other." J.A. 6228.

The Board did not consider whether these statements were so "clear and unmistakable" as to constitute disclaimer. *Omega Eng'g, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1325–26 (Fed. Cir. 2003). Instead, it dismissed them altogether, relying on *Tempo Lighting, Inc. v. Tivoli, LLC*, 742 F.3d 973 (Fed. Cir. 2014), to conclude that any disclaimers "are binding on the patent owner only." J.A. 32. Petitioners agree, arguing that prosecution disclaimer "does not provide a mechanism for *a patentee* to avoid invalidity without engaging in the formal process of amendment where, as here, the claims would otherwise be construed more broadly." Appellees Br. 42.

In inter partes review, the Board construes claims according to "their broadest reasonable construction in light of the specification as they would be interpreted by one of ordinary skill in the art." *Trivascular, Inc. v. Samuels*, 812

F.3d 1056, 1061–62 (Fed. Cir. 2016).[3] In applying this standard, "words of the claim must be given their plain meaning, unless such meaning is inconsistent with the specification and the prosecution history." *Id.* at 1062. The Board must "exclude any interpretation that was disclaimed during prosecution." *Arendi S.A.R.L. v. Google LLC*, 882 F.3d 1132, 1135 (Fed. Cir. 2018). Never have we authorized the Board to disregard clear and unmistakable statements of disclaimer from the prosecution history of a patent simply because it is the patent owner arguing for disclaimer. In *Arendi*, we held that the Board erred in declining to apply prosecution disclaimer, for which the patent owner advocated. 882 F.3d at 1136. Claim construction is an objective inquiry. *See Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1116 (Fed. Cir. 2004). It "is not a policy-driven inquiry." *SmithKline Beecham Corp. v. Apotex Corp.*, 403 F.3d 1331, 1339 (Fed. Cir. 2005). The meaning of a claim term does not change depending on the party that argues prosecution disclaimer.

Tempo does not say otherwise. There, we stated that "the PTO is under no obligation to accept a claim construction proffered as a prosecution history disclaimer, which generally only binds the patent owner." *Tempo*, 742 F.3d at 978. This means the Board is not required to accept a patent owner's arguments as disclaimer when deciding the merits of those arguments. It does not mean the Board in an inter partes review can ignore statements made in a

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[3] The Board's decision issued prior to the effective date of the U.S. Patent and Trademark Office's change to the claim construction standard applied in inter partes review. *See* Changes to the Claim Construction Standard for Interpreting Claims in Trial Proceedings Before the Patent Trial and Appeal Board, 83 Fed. Reg. 51,340 (Oct. 11, 2018).

prior reexamination. Indeed, *Tempo* relied on the prosecution history to construe the claim. *Id.* at 977.

The statements VirnetX made during reexamination constitute disclaimer. VirnetX described a system in which a client computer communicates with an intermediate server via a singular, point-to-point connection. That intermediate server then relays the data to a target computer on the same private network on which the server resides. VirnetX stated that because the computers "do not communicate directly with each other" and "[t]he client cannot open a connection with the target itself," the computers are not on the same VPN. J.A. 6228. This clearly and unmistakably states that a "VPN between the client computer and the target computer" requires direct communication between the client and target computers.

VirnetX argues that under the proper construction, Kiuchi does not satisfy this limitation. This is a question of fact. As such, we leave it to the Board to assess Kiuchi's disclosure in light of the proper construction in the first instance. Because the Board erred in construing this term, which impacts both its anticipation finding and obviousness determination, we vacate and remand.

III. Constitutional Challenge

Prior to the Supreme Court's decision in *Oil States Energy Servs., LLC v. Green's Energy Grp., LLC*, 138 S. Ct. 1365 (2018), VirnetX argued we should wait for the Supreme Court to decide whether inter partes review is constitutional. That issue is now moot. To the extent VirnetX attempts to raise a constitutional challenge based on retroactivity in its reply, that issue is waived. *See Trading Techs. Int'l, Inc. v. IBG LLC*, 921 F.3d 1084, 1095 (Fed. Cir. 2019).

CONCLUSION

For the foregoing reasons, we hold that (1) on the record, VirnetX has not shown how it is prejudiced by Apple's

joinder and continued participation; (2) substantial evidence supports the Board's finding that Mangrove Partners is not a real party in interest; (3) the Board abused its discretion in denying VirnetX's request for authorization to file a motion for additional discovery; (4) substantial evidence does not support the Board's finding of anticipation of claims 1–2, 6–8, and 12–14 of the '151 based on Kiuchi; (5) the Board erred in construing claims 1, 3–4, 7–8, 10 and 12 of the '135 patent; and (6) VirnetX's constitutional challenge is moot. We vacate the Board's decisions and remand for further proceedings consistent with this opinion.

VACATED AND REMANDED

COSTS

Costs to VirnetX.