IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF VIRGINIA
Richmond Division

THE TRUSTEES OF COLUMBIA
UNIVERSITY IN THE CITY OF
NEW YORK,

        Plaintiff,

v.   Civil Action No. 3:13cv808

NORTONLIFELOCK, INC.,

        Defendant.

MEMORANDUM OPINION

This matter comes before the Court on Plaintiff the Trustees of Columbia University in

the City of New York ("Columbia") and Defendant NortonLifeLock, Inc.'s ("Norton," and

collectively with Columbia, the "Parties") Supplemental Markman[1] Briefs. (ECF Nos. 292,

293.) Each Party has also filed a rebuttal Markman Brief. (ECF Nos. 300, 301.) The Parties

seek claim construction on a single phrase found in the remaining patent claims of Patent No.

8,074,115 (the "115 Patent") and Patent No. 8,601,322 (the "322 Patent"). On December 18,

2019, the Court held a supplemental Markman hearing. This matter is ripe for adjudication. The

Court exercises jurisdiction pursuant to 28 U.S.C. § 1331.[2]

I. Background

The Court presumes familiarity with the background of this matter which has been

detailed in three prior opinions: (1) the *Inter Partes Review* Opinion, *Trs. of Columbia Univ. in*

the City of N. Y. v. Symantec Corp., 390 F. Supp. 3d 665 (E.D. Va. 2019); (2) the Markman

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[1] *Markman v. Westview Instruments, Inc.*, 517 U.S. 370 (1996).

[2] "The district courts shall have original jurisdiction of all civil actions arising under the
Constitution, laws, or treaties of the United States." 28 U.S.C. § 1331.

Opinion, *Trs. of Columbia Univ. in the City of N.Y. v. Symantec Corp.*, No. 3:13cv808, 2019 WL 2774321 (E.D. Va. July 2, 2019); and, (3) the Section 101 Invalidity Opinion, *Trs. of Columbia Univ. in the City of N.Y. v. Symantec Corp.*, No. 3:13cv808, 2019 WL 6138419 (E.D. Va. Nov. 19, 2019).

The 115 Patent and the 322 Patent relate to computer virus scanning and provide "[m]ethods, media, and systems for detecting anomalous program executions." (115 Patent 1:48–49, ECF No. 12-5; 322 Patent 1:49–50, ECF No. 12-6.) In this second Markman proceeding, the Parties have presented a single phrase—"model of function calls for the at least a [part/portion] of the program"—for construction.

As explained in the Court's Section 101 Invalidity Opinion, claim 2 of the 322 Patent is representative of the overall idea of the patent claims remaining at issue in this litigation. Section 101 Invalidity Opinion, 2019 WL 6138419, at *9. It states:

A method for detecting anomalous program executions, comprising:

executing at least a portion of a program in an emulator;

comparing a function call made in the emulator to a *model of function calls for the at least a portion of the program*, wherein the model is a combined model created from at least two models created using different computers; and

identifying the function call as anomalous based on the comparison.

(322 Patent 20:47–55 (emphasis added).)

II. Legal Standard: Claim Construction

"The purpose of claim construction is to 'determin[e] the meaning and scope of the patent claims asserted to be infringed.'" *Samsung Elecs. Co., LTD v. NVIDIA Corp.*, No. 3:14cv757, 2015 WL 4622472, at *1 (E.D. Va. July 30, 2015) (quoting *Markman v. Westview Instruments,*

2

Inc., 52 F.3d 967, 976 (Fed. Cir. 1995) (en banc), *aff'd* 517 U.S. 370 (1996)). The Court must

decide the correct construction of a claim term. *See generally Markman*, 517 U.S. 370.

A court construing a patent claim generally applies the "ordinary and customary

meaning" of the words. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en

banc) (citations omitted). "[T]he ordinary and customary meaning of a claim term is the

meaning that the term would have to a person of ordinary skill in the art in question at the time of

the invention." *Id.* at 1313 (citations omitted).

"It is well-settled that, in interpreting an asserted claim, the court should look first to the

intrinsic evidence of record, *i.e.*, the patent itself, including the claims, the specification and, if in

evidence, the prosecution history."[3] *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582

(Fed. Cir. 1996) (citations omitted). "[T]he claims themselves provide substantial guidance as to

the meaning of particular claim terms." *Phillips*, 415 F.3d at 1314 (citations omitted). However,

"the specification 'is always highly relevant to the claim construction analysis. Usually, it is

dispositive; it is the single best guide to the meaning of a disputed term.'" *Id.* at 1315 (citing

Vitronics, 90 F.3d at 1582). Although the specification may be dispositive, a court should not

impose a limitation on the patent claims based on an embodiment found in the specification—

even if it constitutes a preferred embodiment or the only embodiment. *See Cont'l Circuits LLC

v. Intel Corp.*, 915 F.3d 788, 800 (Fed. Cir. 2019). The Federal Circuit has instructed that "[t]o

avoid improperly importing limitations into the claims, 'it is important to keep in mind that the

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[3] The Federal Circuit has explained that the prosecution history includes "the complete record of the proceedings before the [United States Patent and Trademark Office ("PTO")] and includes the prior art cited during the examination of the patent." *Phillips*, 415 F.3d at 1317 (citations omitted). The prosecution history also includes proceedings before the Patent Trial and Appeal Board (the "PTAB"), such as *inter partes review*. *See Aylus Networks, Inc. v. Apple, Inc.*, 856 F.3d 1353, 1362 (Fed. Cir. 2017) (holding that a patent holder's statements made before the PTAB during *inter partes review* "can be considered for claim construction and relied upon to support a finding of prosecution disclaimer").

purposes of the specification are to teach and enable those of skill in the art to make and use the invention and to provide a best mode for doing so.'" *Id.* at 797 (citations omitted).

"Where the intrinsic record is ambiguous, and when necessary, [the Court may] rely on extrinsic evidence, which consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises." *Samsung Elecs.*, 2015 WL 4622472, at *2 (citations omitted). "Extrinsic evidence, however, may not be used to contract or expand the claim language or the meanings established in the specification." *Id.* (citations omitted).

III. Analysis

A.   The Parties' Positions

The Parties dispute the meaning of the phrase "model of function calls for the at least a [part/portion] of the program."[4]

Norton maintains that the correct construction of this phrase is a "model of function calls created by modeling the program." (Norton Opening Markman Brief 6, ECF No. 292.) This

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[4] The Parties do not contest that "the program" referenced in the disputed phrase refers to the program executing in the emulator. Norton makes this argument in its opening Markman brief. (Norton Opening Markman Brief 7, ECF No. 292.) In its rebuttal Markman Brief, Columbia states that it "agrees that 'the program' in the phrase 'model of function [c]alls for . . . the program' refers to the program executing in the emulator." (Columbia Rebuttal Markman Brief 8 n.4, ECF No. 300.)

The Parties also do not dispute the meaning of "the at least a [part/portion]" contained in the disputed phrase. Norton states that "[t]he [P]arties' dispute centers on the meaning of the 'for . . . the program' language in the [disputed] phrase." (Norton Rebuttal Markman Brief 11, ECF No. 301.) Columbia states that "[t]he [a]sserted [c]laims refer to 'at least a part of the program' to capture the invention's idea that the *entire* program does not need to be executed; rather, it is sufficient to execute a part or portion of the program." (Columbia Opening Markman Brief 1 n.2, ECF No. 293 (emphasis in original).)

4

definition would impose a limitation on the patent claims by requiring the model to be created using the program being executed in the emulator.[5]

Columbia asks that the Court "hold that the disputed term does not require a model 'created by modeling the program,' and apply the plain claim language." (Columbia Opening Markman Brief 12, ECF No. 293 (emphasis in original).) Alternatively, Columbia requests that the Court "(i) hold that the Asserted Claims do not require a model 'created by modeling the program,' and (ii) instruct the jury that the disputed term means 'model of function calls created by modeling program executions.'" (Id. (emphasis in original).) This definition would provide a broader interpretation of the patent by allowing the model to be created from certain programs and then applying that model to a new program that was not used to create the model.

> **B.   Based on the Intrinsic Evidence and Due to Judicial Estoppel, the Court Will Construe the Disputed Phrase to Mean "Model of Function Calls Created by Modeling Program Executions"**

The intrinsic evidence, including the patent claims and the specification, demonstrate that the model referenced in the disputed term need not be created by modeling the specific program being executed in the emulator. Principles of judicial estoppel also caution against allowing Norton to argue for its narrow definition of the disputed term after it prevailed when arguing for a broad construction of the term before the PTAB and the United States Court of Appeals for the Federal Circuit.[6]

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[5] Norton clarified at the December 18, 2019 Markman hearing that it does not believe that the model must be built using *only* the program executing in the emulator, but that it must *at least* be built using that program.

[6] As its first argument, Columbia contends that the plain and ordinary meaning of the disputed phrase is the appropriate definition. However, as shown throughout their Markman briefing the Parties dispute the plain and ordinary meaning of the phrase. And, here, Norton has virtually flipped its position on the meaning of the disputed term. After holding, for the reasons stated below, that the term is not limited in the way Norton requests, and considering the procedural history at bar, the Court cannot conclude that the plain and ordinary meaning of this

1. The Intrinsic Evidence

At least two aspects of the intrinsic evidence do not support limiting the disputed term in the way Norton seeks. While the 115 Patent contains an embodiment that may support Norton's contention that the model must be created by modeling the program executing in the emulator, the Court will not limit the claim term based on this embodiment. *See Cont'l Circuits LLC*, 915 F.3d at 800 (finding error when the district court limited a claim term based on an embodiment in the specification). The Court concludes that the disputed term does not require that the model be "created by modeling the program."

First, Norton correctly notes that the 115 Patent describes an embodiment in which an "application community" runs a program and creates a model of that program to make predictions about that particular program. (*See* 115 Patent 6:31–47.) However, this is a single embodiment of the 115 Patent. The 322 Patent does not contain it. Despite the lack of reference to an application community, the 322 Patent's claims utilize the disputed phrase. Therefore, to construe the disputed phrase in light of the 115 Patent's embodiment would not only amount to error under *Continental Circuits LLC*, 915 F.3d at 800, but it would also impose a limitation on the 322 Patent that its specification does not contemplate.

A second aspect of the intrinsic evidence also cautions against limiting the model in the way proposed by Norton. The specification of both the 115 Patent and the 322 Patent states that it "incorporate[s] by reference" Provisional Patent Application No. 60/730,289. (115 Patent 1:8–14; 322 Patent 1:8–15.) The Provisional Patent Application "incorporate[s] by reference" a

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technical term would be clear to a person of ordinary skill in the art at the time of the inventions. Given the lengthy procedural history here, and in accordance with the Court's obligation to construe disputed claim terms, the Court declines to allow the case to proceed without a specific definition of this disputed phrase. *See O2 Micro Int'l Ltd. v. Beyond Innovation Tech. Co., Ltd.*, 521 F.3d 1351, 1362 (Fed. Cir. 2008) (stating that "[w]hen the parties present a fundamental dispute regarding the scope of a claim term, it is the court's duty to resolve it").

"document titled 'One Class Support Vector Machines for Detecting Anomalous Windows Registry Accesses,' by Katherine Heller, et al." (Provisional Patent Application No. 60/730,289, ECF No. 300-9.) This paper describes the results of creating a model from programs, using that model to analyze a different program—one not contained in the model—and making predictions about whether the new, unknown, program is malicious or benign.[7] (*See id.*) This process would not be possible under Norton's proposed construction and the Court will not interpret the disputed phrase in a way that precludes this process. *See Oatey Co. v. IPS Corp.*, 514 F.3d 1271, 1276 (Fed. Cir. 2008) ("We normally do not interpret claim terms in a way that excludes embodiments disclosed in the specification." (citations omitted)). For this reason, the intrinsic evidence does not support limiting the claims in the way Norton seeks.

2.   Judicial Estoppel

Principles of judicial estoppel also preclude Norton from prevailing on its arguments for a limited definition of the term. Before both the PTAB and the Federal Circuit, Norton sought a broad construction of the phrase "model of function calls;" indeed, Norton's earlier position amounts to a similar definition to that which Columbia places before this Court. Norton cannot now argue for a limited definition of this term seemingly (at least in part) because its interests have changed.

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[7] Norton argued at the December 18, 2019 Markman Hearing that Professor Stolfo, an inventor of the 115 and 322 Patents, appeared to explain that the patented invention was not meant to be used in this way. However, even presuming their characterization of the testimony is correct, inventor testimony constitutes extrinsic evidence. *Phillips*, 415 F.3d at 1317 (citing *Markman*, 52 F.3d at 980). Such extrinsic evidence "may not be used to contract or expand the claim language or the meanings established in the specification." *Samsung Elecs.*, 2015 WL 4622472, at *2 (citing *Phillips*, 415 F.3d at 1318–19). The Federal Circuit also has explained "it is not unusual for there to be a significant difference between what an inventor thinks his patented invention is and what the ultimate scope of the claims is after allowance by the PTO." *Howmedica Osteonics Corp. v. Wright Med. Tech., Inc.*, 540 F.3d 1337, 1347 (Fed. Cir. 2008) (citations omitted). For this reason, the Court will not allow Professor Stolfo's testimony to limit the patent claims.

Judicial estoppel applies "[w]here a party assumes a certain position in a legal proceeding, and succeeds in maintaining that position." *Trs. in Bankr. of N. Am. Rubber Thread Co., Inc. v. United States*, 593 F.3d 1346, 1353–54 (Fed. Cir. 2010). In that situation, "he [or she] may not thereafter, simply because his [or her] interests have changed, assume a contrary position." *Id.*; *see Data Gen. Corp. v. Johnson*, 78 F.3d 1556, 1565 (Fed. Cir. 1996) (citations omitted) ("The doctrine of judicial estoppel is that where a party successfully urges a particular position in a legal proceeding, it is estopped from taking a contrary position in a subsequent proceeding where its interests have changed.").

Three non-exclusive factors inform the Court's decision as to whether to apply judicial estoppel:

> (1) whether the "party's later position [is] 'clearly inconsistent' with its earlier position"; (2) "whether the party has succeeded in persuading a court to accept that party's earlier position, so that judicial acceptance of an inconsistent position in a later proceeding would create 'the perception that either the first or the second court was misled'"; and (3) "whether the party seeking to assert an inconsistent position would derive an unfair advantage or impose an unfair detriment on the opposing party if not estopped."

Trs. in Bankr. of N. Am. Rubber Thread Co., Inc., 593 F.3d at 1354.

Here, each of the three factors support estopping Norton from arguing for its limited definition of the disputed phrase. First, Norton's current position that the phrase should be limited to a model created from modeling the program executing in the emulator is "clearly inconsistent" with its prior arguments before the PTAB and the Federal Circuit. Specifically, before the PTAB Norton stated:

> [t]he model of function calls, as in the express wording of the claims, if they had wanted to claim something narrower, *if they had wanted to claim just models that were created in a particular way relating to particular aspects of a program* that was operating versus not operating, then the claim could have recited that.

8

(PTAB Tr. 9, ECF No. 300-6 (emphasis added).) During the appeal from the PTAB's *inter partes review* decisions, Norton argued that:

> [t]he Board appropriately rejected Columbia's new construction, explaining that the "Patent Owner has not presented sufficient evidence in the Specification or prosecution history that the inventors intended to limit the invention, and thus all the claims, to a model built using a learning algorithm." ... The Board also elaborated on its Institution Decisions, explaining that "the claims do not require execution of the program to create the model."

(Norton Brief 40, ECF No. 300-7 (emphasis added).) In that same brief, Norton added that "[t]he claims do not expressly limit *how* the models are built. . . . *Moreover, the claims certainly do not expressly require that the models be built from execution of the program.*" (*Id.* 41 (second emphasis added).) Looking to these arguments, Norton's current position is "clearly inconsistent" with its former position. *See Trs. in Bankr. of N. Am. Rubber Thread Co., Inc.*, 593 F.3d at 1354.

Second, when its interests seemingly aligned with a broad definition of the term (because it increased the probability of invalidity), Norton succeeded in persuading both the PTAB and the Federal Circuit to adopt its former position. Specifically, the PTAB rejected Columbia's attempts to limit "model of function calls" and applied the plain meaning of the term. *See* Decision to Institute, *Symantec Corp. v. Trs. of Columbia Univ. in the City of N.Y.*, No. IPR2015-00375, (P.T.A.B. 2015) (ECF No. 300-12) (rejecting Columbia's initial claim construction argument); Final Written Decision of the 115 Patent, *Symantec Corp. v. Trs. of Columbia Univ. in the City of N.Y.*, No. IPR2015-00375, (P.T.A.B. 2016) (ECF No. 300-17) (rejecting Columbia's second claim construction argument and finding that "it was not necessary to construe" the disputed phrase). On appeal, the Federal Circuit affirmed the PTAB's *inter partes review* decisions in full. *Trs. of Columbia Univ. in the City of N.Y. v. Symantec Corp.*, 714 Fed. App'x 1021, 1022 (Fed. Cir. 2018) (per curiam). Therefore, Norton succeeded in arguing for a

broad construction of the disputed phrase before the PTAB and the Federal Circuit, which meets the second factor of the judicial estoppel test even given the differing claim construction standards applied by the Court and the PTAB.[8] *See Trs. in Bankr. of N. Am. Rubber Thread Co., Inc.*, 593 F.3d at 1354.

Finally, allowing Norton to take a position before this Court so contrary to that it took before the PTAB and the Federal Circuit would result in Norton having an unfair advantage in this litigation. Norton argued for —and obtained—a broad construction of the disputed phrase when a broad definition would likely result in the PTAB finding more patent claims invalid in light of the prior art. Now that its interests have changed as this Court considers infringement, Norton requests a narrow definition of the term, thereby narrowing the possibility of infringement. Allowing such a change in position would result in Norton having an "unfair advantage" in this litigation. *See Trs. in Bankr. of N. Am. Rubber Thread Co., Inc.*, 593 F.3d at 1354. The Court will not allow this.

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[8] When a district court construes a patent term, it must follow the standard put forth in *Phillips*, 415 F.3d 1303. In contrast, when conducting an *inter partes review*, the PTAB construes terms pursuant to their "broadest reasonable construction," a different standard than the one applied in the district court. *See SkyHawke Techs., LLC v. Deca Int'l Corp.*, 828 F.3d 1373, 1376 (Fed. Cir. 2016).

IV. Conclusion

For the foregoing reasons, the Court will conclude that the phrase "model of function calls for the at least a [part/portion] of the program" does not require a model created by modeling the program. The Court construes the phrase to mean "model of function calls created by modeling program executions."

An appropriate order shall issue.

/s/

M. Hannah Lauck
United States District Judge

Date: 12/20/2019
Richmond, Virginia