UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

APPLIED MATERIALS INC., Plaintiff, v. URI COHEN, Defendant.	Case No. 17-cv-04990-EMC **ORDER DENYING DEFENDANT'S MOTION TO DISMISS** Docket No. 52

I. INTRODUCTION

Plaintiff Applied Materials Inc. ("Applied" or "AMAT") initiated this lawsuit against Defendant Dr. Uri Cohen ("Cohen"), seeking declaratory judgment of non-infringement of four of Cohen's patents — (i) U.S. Patent No. 6,518,668 (hereafter "'668 patent"), (ii) U.S. Patent No. 6,924,226 (hereafter "'226 patent"), (iii) U.S. Patent No. 7,199,052 (hereafter "'052 patent"), and (iv) U.S. Patent No. 7,282,445 (hereafter "'445 patent") (collectively the "patents-in-suit"). Cohen moves to dismiss the action pursuant to Fed. Rule of Civil Procedure 12(b)(1), arguing that the Court lacks subject matter jurisdiction over the action. More specifically, Cohen argues that the Declaratory Judgment Act, 28 U.S.C. § 2201(a), does not confer subject matter jurisdiction because there is no "case of actual controversy". Having reviewed the parties' submissions, the Court finds that there is Article III case or controversy between the parties, and hereby **DENIES** Cohen's Motion to Dismiss for lack of subject matter jurisdiction.

II. FACTUAL AND PROCEDURAL BACKGROUND

The patents-in-suit claim methods and structures for making multiple seed layers for metallic interconnects. *See* Docket No. 1-1, Exh. B, and Exh. C; *see* also Docket No. 1-2, Exh. D, and Exh. E. Such metallic interconnects are an integral component in the creation of

semiconductor chips. *Id.* Applied developed and manufactures a product called Endura Volta, which performs processes to fabricate metallic interconnects. *See* Docket No. 1 at ¶ 3. This declaratory judgment action stems from Cohen's allegations that Taiwan Semiconductor Manufacturing Company, Ltd. ("TSMC"), one of Applied's customers, has infringed the patents-in-suit by using Endura Volta purchased from Applied to create semiconductor chips. *Id*. at ¶ 1.

On May 5, 2017, Cohen filed a patent infringement lawsuit against TSMC and TSMC's customers in the Eastern District of Texas ("EDTX Customer Suit"), alleging that TSMC infringed certain of his patents based on TSMC's manufacture of semiconductors using Applied's Endura Volta. *See* Docket No. 1 ("Compl.") at ¶ 1, 8–10. In the EDTX Customer Suit, Cohen cites Applied's Youtube video, "Volta Animation", which describes how to use Applied's Endura Volta to practice the allegedly infringing method of manufacturing metallic interconnects. *Id*. at ¶ 11-12; *see also* Docket No. 64 at 4. The EDTX Customer Suit does not name Applied as a defendant.

On November 6, 2017, the EDTX Customer Suit was transferred from the Eastern District of Texas to this Court. Cohen has since filed a Second Amended Complaint against TSMC (hereafter, "TSMC Complaint"), but the allegations of the use of Applied's Endura Volta product and citations to Applied's video remain identical. *See* Docket No. 55, Case 17-cv-06451-EMC (N.D. Cal.).

On August 28, 2017, Applied filed this declaratory judgment action against Cohen, seeking (1) a declaration that that devices containing a metallic interconnect fabricated using Endura Volta do not infringe claim 26 of the '668 patent; (2) a declaration that the use of Endura Volta, the process performed by Endura Volta, and metallic interconnects fabricated by Endura Volta do not infringe claim 1 of the '226 patent; (3) a declaration that the use of Endura Volta, the process performed by Endura Volta, and metallic interconnects fabricated by Endura Volta do not infringe claim 4 of the '052 patent; and (4) a declaration that the use of Endura Volta, the process performed by Endura Volta, and metallic interconnects fabricated by Endura Volta do not infringe claim 18 of the '445 patent. *See* Docket No. 1 ("Compl.") at 5–9. Cohen has moved to dismiss this suit for lack of a case or controversy.

III. DISCUSSION

A. Legal Standard

Federal Rule of Civil Procedure 12(b)(1) provides that a defendant may move for a dismissal based on a lack of subject matter jurisdiction. *See* Fed. R. Civ. P. 12(b)(1). The plaintiff bears the burden of establishing the court's jurisdiction. *See Kokkonen v. Guardian Life Ins. Co. of Am.*, 511 U.S. 375, 377 (1994). A party has standing to bring an action under the Declaratory Judgment Act if an "actual controversy" exists, 28 U.S.C. § 2201(a), which "is the same as an Article III case or controversy." *Teva Pharm. USA, Inc. v. Novartis Pharm. Corp.*, 482 F.3d 1330, 1338 (Fed.Cir.2007). A Rule 12(b)(1) motion will be granted if the complaint, when considered in its entirety, on its face fails to allege facts sufficient to establish subject matter jurisdiction. *See Savage v. Glendale Union High Sch.*, 343 F.3d 1036, 1039 (9th Cir. 2003).

To satisfy Article III's standing requirements, a plaintiff must demonstrate that "the facts alleged, under all circumstances, show that there is a substantial controversy, between parties having adverse legal interests, of sufficient immediacy and reality to warrant the issuance of a declaratory judgment." *MedImmune, Inc. v. Genentech, Inc.*, 5459 U.S. 118, 127 (2007), reversed-in-part on other grounds by *Ass'n for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576, (2013). An "adverse legal interest" requires a dispute as to a legal right—for example, an underlying legal cause of action that the declaratory defendant could have brought or threatened to bring. *See Arris Group, Inc. v. British Telecommunications PLC*, 639 F.3d 1368, 1374 (Fed. Cir. 2011).

Even if there is Article III jurisdiction, district courts have discretion whether to entertain an action under the Declaratory Judgment Act. *See 3M Co. v. Avery Dennison Corp.*, 673 F.3d 1372, 1376 (Fed. Cir. 2012). Factors considered in that inquiry include whether "the declaratory judgment action was duplicative of other proceedings [or] the party instituted [the] action solely to enhance its bargaining power in negotiations." *Teva Pharma. USA, Inc. v. EISAI Co., Ltd.*, 620 F.3d 1341, 1349 (Fed. Cir. 2010).

B. Article III Jurisdiction

Applied contends that it has standing and that there is an Article III case or controversy

because (i) Cohen "could just as easily have asserted a claim of direct infringement against [Applied], based on the same underlying circumstances in the customer suit", *Microsoft Corp. v. GeoTag, Inc.*, No. CV 11-175-RGA, 2014 WL 4312167, at *2 (D. Del. Aug. 29, 2014), and (ii) the very nature of Cohen's allegations against TSMC suggest that there is a "reasonable potential that [sic] a claim [of induced or contributory infringement] could be brought" against Applied. *Microsoft Corp. v. DataTern, Inc.*, 755 F.3d 899, 904 (Fed. Cir. 2014).

1. There Is An Actual Controversy That Applied Might Be Liable For Direct Infringement

The EDTX Customer Suit between Cohen and Applied's customer TSMC gives rise to an actual controversy as to whether Applied might be liable for direct patent infringement. 35 U.S.C. § 271(a). Pursuant to § 271(a) of the Patent Act, "whoever without authority makes, uses, offers to sell, or sells any patented invention, within the United States or imports into the United States any patented invention during the term of the patent therefor, infringes the patent." 35 U.S.C. § 271(a). In the EDTX Customer Suit, Cohen has accused Applied's customer, TSMC, of directly infringing method claims of the patents-in-suit; Cohen alleges that TSMC is in violation of § 271(a) of the Patent Act since TSMC "has continued to intentionally, actively, and knowingly make, use, sell, offer to sell" the patented invention at issue. *See* TSMC Compl. ¶¶ 67, 79, 108-109.

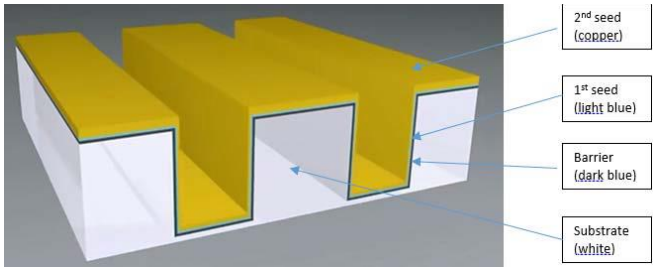
More specifically, in the TSMC Complaint, Cohen's allegations against TSMC is predicated on Applied's Endura Volta product and Volta Animation:

> 55. In 2010, in an article titled "A New Enhancement Layer to Improve Copper Interconnect Performance," and published in the IEEE International Technology Conference, TSMC reported that the use of cobalt as a seed/enhancement layer between a PVD tantalum barrier layer and a copper seed layer would improve copper wetting on the barrier layer, improve interconnect quality, electrical performance, reliability, and maximize gap fill in integrated circuits ("TSMC's IEEE Paper").
>
> 56. To achieve this integrated circuit design in its 20 nanometer and 16 nanometer node technologies, as reported in TSMC's IEEE Paper, TSMC on information and belief utilizes equipment supplied to it by Applied Materials, Inc. ("AMAT"), including AMAT's Endura platform and Endura Volta System.

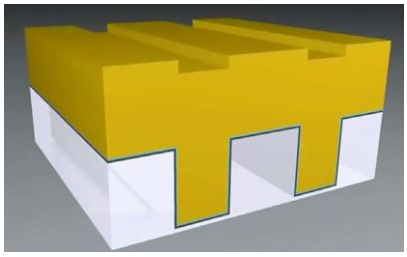
57. The Endura platform supports both Physical Vapor Deposition (PVD) and Chemical Vapor Deposition (CVD) processes, including the Endura Volta System, which was introduced by AMAT on May 13, 2014.

58. On information and belief, the method utilized by TSMC to manufacture the Accused Chips and the resulting structure of the Accused Chips themselves are consistent with the methods and structures as explained by TSMC in its IEEE Paper, and as depicted below.

59. As shown here, the resulting 20 nanometer and 16 nanometer devices fabricated by TSMC contain a multiple seed layer structure comprising a patterned insulating layer formed on a substrate, a tantalum barrier layer over the substrate, a first seed layer comprising cobalt, a second seed layer comprising copper, and an electroplated metallic layer of copper disposed over the second seed layer:[1]

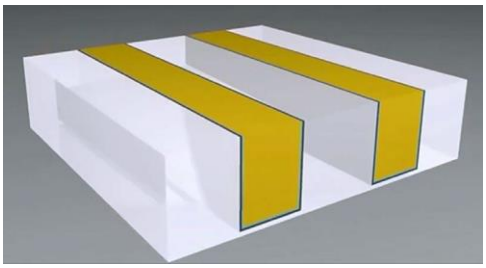


60. After the barrier, first seed layer and second seed layer are formed over the substrate, electroplated copper is disposed over the second seed layer over the openings and the field, as depicted below.

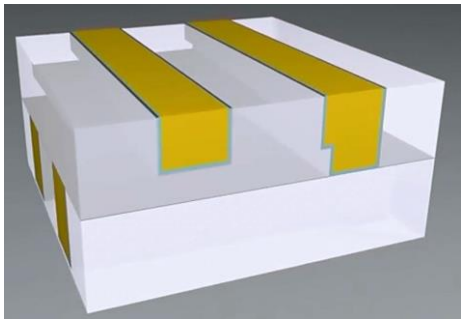


61. After the electroplated copper is disposed over the openings and the field, the electroplated copper overlying the field, the first and second seed layers overlying the field, and the barrier layer overlying the field are all substantially removed by a polishing technique. The resulting interconnect is as is depicted below.

[1] *See* footnote 14 in the TSMC Compl., Docket No. 1-1 at 13, where Cohen cites to a Youtube video titled, "Volta Animation," appliedschannel, https://www.youtube.com/watch?v=EcWdzKRK2dk.



62. Multiple levels of interconnects are often stacked one on top of another, which is the case with the Accused Chips, as depicted below.

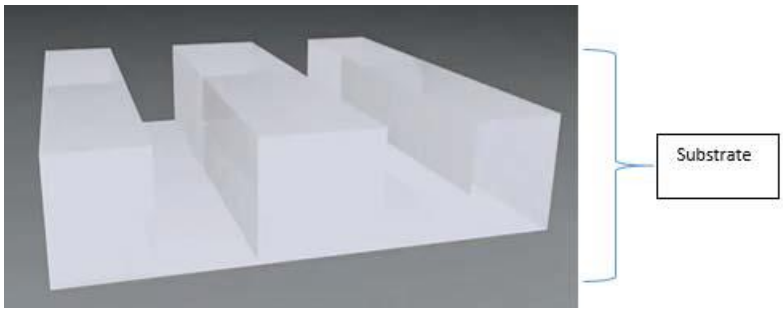


See TSMC Compl. ¶ 55-62.

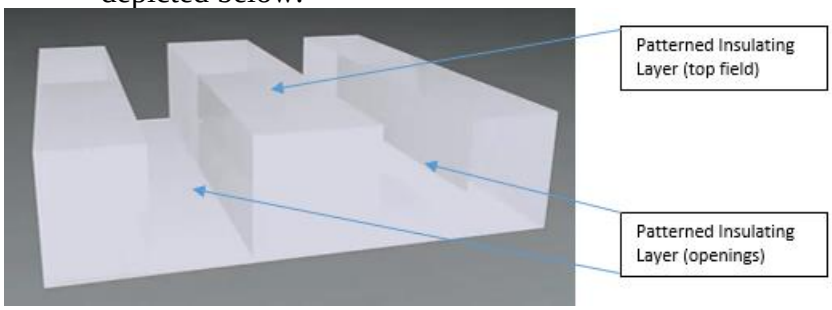
As illustrated above, Cohen makes numerous references to Applied's product and video to allege the infringing act. Applied's Volta Animation is a Youtube video depicting the operation of Endura Volta, which includes Physical Vapor Deposition (PVD) and Chemical Vapor Deposition (CVD) processes necessary to create metallic interconnects, whereby the method as depicted in the animation is allegedly infringing on the patents-in-suit. *See* Docket No. 64 at 14; *see also* Docket No. 76 at 6. Furthermore, in various parts of the TSMC Complaint, Cohen expressly relies on the method described and depicted in Applied's Volta Animation to allege that each and every claim limitation of the four exemplary claims is met by TSMC. For example, to illustrate how TSMC infringed on the '668 Patent, numerous citations to the Volta Animation were made to depict how the limitation of claim 26 was met by TSMC:

122. By way of example and not limitation, each of the Accused Chips meets or embodies every limitation of claim 26 (dependent of claim 1) of the '668 patent:

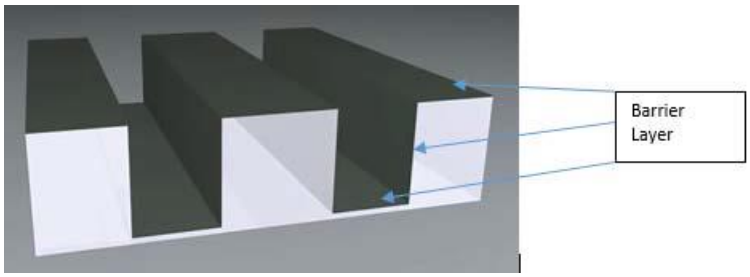
a. a substrate, as depicted below:



b. a patterned insulating layer formed on said substrate, said patterned insulating layer including at least one opening and a top field surface surrounding said at least one opening, as depicted below:

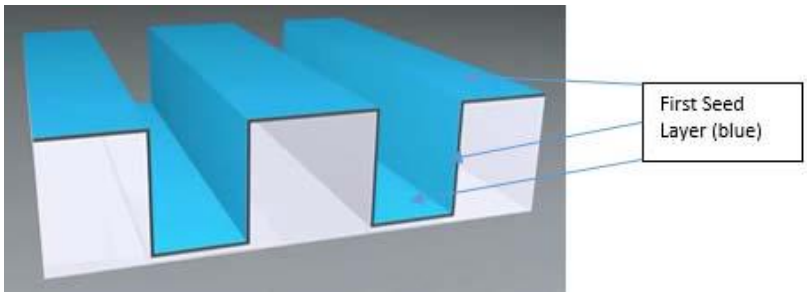


c. a barrier layer disposed over said patterned insulating layer including over inside surfaces of the at least one opening, as depicted below:



In the case of the Accused Chips, tantalum nitrite is used for the barrier layer and is applied through a PVD process.

d. a first seed layer disposed over the barrier layer, said first seed layer comprising a substantially conformal seed layer whose thickness on the sidewalls of the opening (at about mid-depth) is about 25-100% of its thickness on the field, as depicted below:



See TSMC Comp. ¶ 122(a)-(e); *see also* TSMC Compl. ¶¶122(f)-(g), 119(a)-(c), 123(a)-(e), 127(a)-(f).

In addition to the illustrations above taken from the Volta Animation, Cohen's complaint contains many allegations that the use of Applied's Endura Volta technology is allegedly infringing the claimed methods in the patents-in-suit. For example, with respect to the '445 patent, Cohen alleges that TSMC practices the methods illustrated in claim 18 by "utilizing a CVD chamber capable of depositing a CVD seed layer over the sidewalls of [sic] at least one opening", "utilizing a PVD chamber capable of depositing a PVD seed layer over the substrate", "configuring an automatic an automatic controller with recipe information, the recipe information including deposition sequence, process and timing parameters for operation of the CVD chamber and the PVD chamber", and expressly states that the "use of the [Applied's] Volta system requires at least one automatic controller containing recipe information which includes deposition sequences, process and timing parameters for operation of the CVD chamber and the PVD chamber." TSMC Compl. at ¶ 127; *see also* ¶¶ 55-62, 122, 119, 123 (where Cohen alleges that the practice of the manufacturing technique described in Applied's Volta Animation video meets the limitations of claim 26 of the '668 patent, claim 1 of the '226 patent, claim 4 of the '052 patent, and claim 18 of the '445 patent.). Furthermore, Cohen argued during the hearing on this motion that "the method as depicted in the animation . . . would be infringing." Docket No. 76 at 6.

Since Applied "make[s]" Endura Volta and "sells" this product to its customer TSMC, and Applied has pled that it has previously performed the allegedly infringing method during its

development and testing of the Endura units,[2] there is a sufficient threat of a claim for direct infringement under 35 U.S.C. § 271 against Applied so as to give rise to an actual controversy. *See* Compl. at ¶ 13; *see also* Docket No. 64 at 18. Cohen "could just as easily have asserted a claim of direct infringement against [Applied], based on the same underlying circumstances in the customer suit." *Microsoft Corp. v. GeoTag, Inc.*, No. CV 11-175-RGA, 2014 WL 4312167, at *2 (D. Del. Aug. 29, 2014). Notably, Cohen refuses to offer Applied a covenant not to sue, expressly refusing to do so at this Court's suggestion as a way to eliminate the threat of liability. *See* Docket No. 76 at 8–9.

2. There Is An Actual Controversy That Applied Might Be Liable For Indirect Infringement

Further, there is an actual controversy as to whether Applied may be liable for induced or contributory infringement. Where a patent holder accuses customers of direct infringement based on the sale or use of a supplier's equipment, the supplier has standing to commence a declaratory judgment action if (a) the supplier is obligated to indemnify its customers from infringement liability, or (b) there is a controversy between the patentee and the supplier as to the supplier's liability for induced or contributory infringement based on the alleged acts of direct infringement by its customers. *See Arris Group, Inc. v. British Telecommunications PLC*, 639 F.3d 1368, 1375 (Fed. Cir. 2011).

While Cohen did not expressly accuse Applied of contributory infringement, as noted above, he repeatedly singled out Applied's product, the Endura Volta system, and hinges his complaint on the Volta Animation to support his infringement contentions. *See* TSMC Comp. ¶¶

[2] Cohen alleges that the actual use of Applied's product in the manufacturing of semiconductor chips by TSMC took place outside the US and as such, Applied could not be liable for direct infringement under 35 U.S.C. § 271. *See* Docket No. 76 at 30. However, Applied has stated both on the record and during the hearing that the testing had taken place within six years prior to August 28, 2017 in the USA, and it is within the 6-year window for which Cohen could sue for infringement. *See* Docket No. 64 at 18. Applied has also alleged that, "[i]n the course of developing and testing Endura Volta, Applied fabricated metallic interconnects using various methods, including the method accused by Cohen in the EDTX Customer Suit of infringing the patents-in-suit." Compl. at ¶ 13. Thus, Applied's development and testing of the Endura units may be liable for direct infringement under 35 U.S.C. § 271(a), which covers "mak[ing]", or "us[ing]" of Cohen's patented invention. Apart from liability based on testing, Applied may be liable for indirect infringement for the reasons below.

55-62, 122, 119(a)-(c), 123(a)-(e), 127(a)-(f). The TSMC Complaint makes it clear that TSMC's use of Applied's Endura Volta was central to Cohen's infringement contentions.

Contributory infringement is set forth under 35 U.S.C. § 271(c), which provides:

> "Whoever offers to sell or sells within the United States or imports into the United States a component of a patented machine, manufacture, combination, or composition, or a material or apparatus for use in practicing a patented process, constituting a material part of the invention, knowing the same to be especially made or especially adapted for use in an infringement of such patent, and not a staple article or commodity of commerce suitable for substantial noninfringing use, shall be liable as a contributory infringer."

Here, the "allegations by the patentee [and] other record evidence [sic] establish [that] at least a reasonable potential that such a claim could be brought" against Applied. *Microsoft Corp. v. DataTern, Inc.*, 755 F.3d 899, 904 (Fed. Cir. 2014). In *DataTern*, the patentee DataTern sued numerous Microsoft and SAP customers, alleging infringement based on the customers' use of Microsoft's and SAP's software. *Id.* at 902. The patentee had provided claim charts to the customers that referred extensively to Microsoft and SAP functionality. *Id.* Microsoft and SAP subsequently filed declaratory lawsuits against the Patentee, and the court found jurisdiction based on an "implied assertion of induced infringement." *Id.* Specifically, the Federal Circuit noted that, "DataTern's claim charts show that SAP provides its customers with the necessary components to infringe the '402 and '502 patents as well as the instruction manuals for using the components in an infringing manner. Providing instructions to use a product in an infringing manner is evidence of the required mental state for inducing infringement." *Id.* at 905. The Federal Circuit noted that "these claim charts can be read to allege that Microsoft is encouraging the exact use which DataTern asserts amount to direct infringement." *Id.*

As in *DataTern*, in the case at bar, Applied provided its customer TSMC with the "necessary component to infringe" Cohen's patents; Endura Volta was used to make infringing metallic interconnects. *Id*. Further, Applied supplied the Volta Animation used by TSMC. The instructional dimension of the Volta Animation is akin to "claim charts" and "instruction manuals" in *DataTern*, from which encouragement of infringement by Applied may be inferred. *Id*; *see also* Docket No. 76 at 6. Thus, there is "an implicit assertion of indirect infringement" against

Applied, and therefore a basis for an Article III case or controversy as to whether Applied may be held liable for indirect infringement of the patents-in-suit. *See Arris Group, Inc. v. British Telecommunications PLC*, 639 F.3d 1368, 1375 (Fed. Cir. 2011).

Cohen argues that no case or controversy existed between him and Applied because there has not been any contact or affirmative acts of patent enforcement taken against Applied. *See* Docket No. 52-1 at 8–9. Cohen argues that Applied failed to allege that Cohen demanded "a right to a royalty", that Cohen sent "a cease-and-decease letter", or that Cohen communicated with Applied's employees, and that the absence of "an overt, specific act toward the declaratory judgment plaintiff" was "a significant hurdle to a finding of jurisdiction under the Declaratory Judgment Act." *Edmunds Holding Co. v. Autobytel, Inc.*, 598 F. Supp. 2d 606, 610 (D. Del. 2009). However, courts have found declaratory judgment jurisdiction even where the patentee never had any contact with the declaratory judgment plaintiff prior to filing suit. *See Microsoft Corp. v. DataTern, Inc.*, 755 F.3d 899, 903 (Fed. Cir. 2014) (The Federal Circuit held that declaratory judgment jurisdiction exists even in circumstances where the patentee never approached the DJ plaintiff regarding a license, never accused the DJ plaintiff of infringement or indicated it did not intend to sue.); *see also Amazon.com, Inc. v. Straight Path IP Grp. Inc.*, No. 5:14-cv-04561-EJD, 2015 WL 3486494 at *6 (N.D. Cal. May 28, 2015) (The court found jurisdiction despite the patentee's assertions "that it never approached Amazon regarding licensing, never accused Amazon of infringement" when the patentee's infringement claims against third parties were based on the third party's "use of Amazon's products."). Such contact is not the *sine qua non* of a claim for indirect infringement when the elements of the claim are present.

Second, Cohen argues that his allegations against TSMC should not be construed as including any implicit assertion of direct or indirect infringement by Applied because Cohen accuses TSMC of direct infringement for "selling and/or offering for sale" semiconductor chips with proprietary "metallic interconnects". *See* Docket No. 52-1 at 11. Cohen argues that his allegations against Applied's customer TSMC relate to TSMC's sale of chips made using Applied's equipment, and that he did not allege that the making, selling or use of Applied's equipment constituted infringement in the TSMC Complaint. *Id*. However, there are at least two

instances in the TSMC Complaint where Cohen's allegations against Applied's customer TSMC are not restricted to the sale of semiconductor chips:

> 69. The Defendants have infringed at least one claim of each of the patents-in-suit by making, using, selling, offering for sale within the United States and/or importing into the United States, the Accused Chips; or induced infringement of the same.
>
> 108. Since becoming aware of, or being willfully blind towards, its infringement of the patents-in-suit, TSMC has continued to intentionally, actively, and knowingly make, use, sell, offer to sell, and/or import one or more of the Accused Chips through its retailers, resellers, and distributors, as well as in other ways.

See TSMC Compl. ¶¶ 69, 108 (emphasis added). As evidenced above, the allegations include "making, using, selling, [and/or] offering for sale." *Id*. Since the *making* of semiconductor chips is predicated by the use of Applied's product and method, there is an actual controversy concerning Applied's potential liability for indirect infringement.[3]

Third, Cohen argues that declaratory judgment jurisdiction does not exist because he is "unaware of or has not investigated any activity by Applied that would transform the use of its equipment by others into an act of infringement by [Applied]." Docket No. 52-1 at 8. Cohen argues further that his open description of Applied's role in the TSMC Complaint, in a public filing, without bringing suit against Applied, suggests the opposite of reasonable apprehension of suit against Applied. *Id*. But Cohen could well bring suit against Applied in the future (especially since he refuses to offer a covenant not to sue). The Federal Circuit has explicitly rejected consideration of "whether [the patentee] had conducted an adequate investigation or whether it subjectively believed [the other party] was infringing." *Hewlett-Packard Co. v. Acceleron LLC*, 587 F.3d 1358, 1363 (Fed. Cir. 2009) ("The test [for declaratory judgment jurisdiction in patent cases],

[3] Cohen has similarly alleged during the hearing that Applied could not be liable for indirect infringement because he is suing TSMC for violating § 271(g), which includes importation and use in the United States of a product made by an alleged infringing process, and Applied could not be liable for inducing every element of indirect infringement, specifically the act of inducing importation of a product. *See* Docket No. 76 at 5. Cohen's arguments are not persuasive because as noted in the preceding paragraphs, Cohen's allegations in the TSMC Complaint are broader than mere importation and/or sale— Cohen has alleged that TSMC is in violation of § 271(a) and/or § 271(g), and the allegations include "making, using, selling, [and/or] offering for sale." See TSMC Compl. ¶¶ 69, 79, 108-110.

however stated, is objective . . . ." "Indeed, it is the objective words and actions of the patentee that are controlling." Thus, conduct that can be reasonably inferred as demonstrating intent to enforce a patent can create declaratory judgment jurisdiction.").

Accordingly, Cohen's infringement allegations against TSMC implies a potential claim of indirect infringement. 35 U.S.C. §§ 271(a), (c) and (g). *See Arris Group, Inc. v. British Telecommunications PLC*, 639 F.3d 1375. There is an Article III case or controversy between Applied and Cohen regarding Applied's potential liability for patent infringement based on consideration of "all the circumstances." *MedImmune*, 549 U.S. at 127.

C. Discretionary Jurisdiction

Cohen argues that with the earlier filed proceedings against TSMC, this proceeding is redundant and warrants dismissal. *See* Docket No. 52-1 at 11. However, all of Cohen's, TSMC's and Applied's claims are now before this Court (cases 3:17-cv-05001-EMC and 3:17-cv-06451-EMC). In permitting this case to proceed, there is no risk – indeed, a lessened risk – of needless duplicative proceedings or future serial actions. It is appropriate to exercise jurisdiction over Applied's claims for declaratory relief in the interest of judicial efficiency. *See Teva Pharma. USA, Inc. v. EISAI Co., Ltd.*, 620 F.3d 1341, 1349 (Fed. Cir. 2010).

IV. CONCLUSION

For the foregoing reasons, the Court **DENIES** Cohen's motion to dismiss for lack of subject matter jurisdiction.

This order disposes of Docket No. 52.

IT IS SO ORDERED.

Dated: March 20, 2018

EDWARD M. CHEN
United States District Judge