

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

CISCO SYSTEMS INC. and
ACACIA COMMUNICATIONS, INC.,

Plaintiffs,

v.

RAMOT AT TEL AVIV UNIVERSITY
LTD.,

Defendant.

C.A. No. 21-1365-GBW

CISCO SYSTEMS INC. and
ACACIA COMMUNICATIONS, INC.,

Plaintiffs,

v.

RAMOT AT TEL AVIV UNIVERSITY
LTD.,

Defendant.

C.A. No. 22-674-GBW (consolidated)

Jack B. Blumenfeld, Jennifer Ying, MORRIS, NICHOLS, ARSHT & TUNNELL LLP,
Wilmington, DE; L. Norwood Jameson, Matthew C. Gaudet, Sajid Saleem, Aniel Mitchell,
DUANE MORRIS LLP, Atlanta, GA; Joseph A. Powers, Aleksander J. Goranin, DUANE
MORRIS LLP, Philadelphia, PA; Holly E. Engelmann, DUANE MORRIS LLP, Austin, TX.

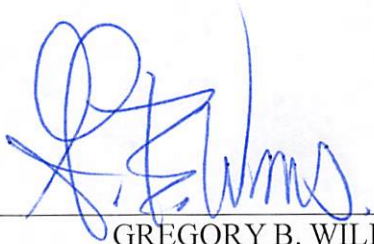
Counsel for Plaintiffs

John G. Day, Andrew C. Mayo, ASHBY & GEDDES, Wilmington, DE; Denise De Mory, Corey
Johanningmeier, Michael Flynn-O'Brien, Brenda Entzminger, BUNSOW DE MORY LLP,
Redwood City, CA; James T. Wilson, Wayne M. Helge, BUNSOW DE MORY LLP,
Alexandria, VA.

Counsel for Defendant

MEMORANDUM OPINION

November 12, 2024
Wilmington, Delaware


GREGORY B. WILLIAMS
UNITED STATES DISTRICT JUDGE

Plaintiffs Cisco Systems Inc. and Acacia Communications, Inc. (collectively, “Cisco”) have brought declaratory judgment actions against patentee Ramot at Tel Aviv University (“Ramot”). Before the Court are two claim construction disputes, relating to U.S. Patent Nos. 11,133,872 (the “’872 patent”) and 11,342,998 (the “’998 patent”).¹ The Court has reviewed the parties’ briefing. D.I. 111.² The Court held a claim construction hearing on September 17, 2024 (“Tr. [#]”).

I. LEGAL STANDARDS

A. Claim Construction

“[A] patent is[] the conferral of rights in a particular claimed set of elements.” *Limelight Networks, Inc. v. Akamai Techs., Inc.*, 572 U.S. 915, 921 (2014). “[T]he claims of a patent define the invention to which the patentee is entitled the right to exclude.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (citation omitted); *Aventis Pharms. Inc. v. Amino Chemicals Ltd.*, 715 F.3d 1363, 1373 (Fed. Cir. 2013) (same). “[T]here is no magic formula or catechism for conducting claim construction.” *Phillips*, 415 F.3d at 1324. The Court is free to attach the appropriate weight to appropriate sources “in light of the statutes and policies that inform patent law.” *Id.* The ultimate question of the proper construction of a patent is a question of law, although “subsidiary factfinding is sometimes necessary.” *Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 574 U.S. 318, 326–27 (2015); see *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 372 (1996) (“the construction of a patent . . . is exclusively within the province of the court.”).

¹ The Court writes for the benefit of the parties and assumes familiarity with the case.

² Unless otherwise noted, all D.I. cites are to the 21-cv-1365 action.

“The words of a claim are generally given their ordinary and customary meaning as understood by a person of ordinary skill in the art when read in the context of the specification and prosecution history.” *Thorner v. Sony Comput. Entm’t Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012) (citing *Phillips*, 415 F.3d at 1313); *Unwired Planet, LLC v. Apple Inc.*, 829 F.3d 1353, 1358 (Fed. Cir. 2016) (similar). The “only two exceptions to this general rule” are (1) when a patentee defines a term or (2) disavowal of “the full scope of a claim term either in the specification or during prosecution.” *Thorner*, 669 F.3d at 1365 (citation omitted).

The Court “first look[s] to, and primarily rel[ies] on, the intrinsic evidence,” which includes the claims, written description, and prosecution history and “is usually dispositive.” *Personalized Media Commc’ns, LLC v. Apple Inc.*, 952 F.3d 1336, 1340 (Fed. Cir. 2020) (citation omitted). “[T]he specification ‘is the single best guide to the meaning of a disputed term.’” *Akzo Nobel Coatings, Inc. v. Dow Chem. Co.*, 811 F.3d 1334, 1340 (Fed. Cir. 2016) (citation omitted). “[T]he specification may reveal a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess.’ When the patentee acts as its own lexicographer, that definition governs.” *Cont’l Cirs. LLC v. Intel Corp.*, 915 F.3d 788, 796 (Fed. Cir. 2019) (quoting *Phillips*, 415 F.3d at 1316). However, “[the Court] do[es] not read limitations from the embodiments in the specification into the claims.” *MasterMine Software, Inc. v. Microsoft Corp.*, 874 F.3d 1307, 1310 (Fed. Cir. 2017) (citation omitted)). The “written description . . . is not a substitute for, nor can it be used to rewrite, the chosen claim language.” *SuperGuide Corp. v. DirecTV Enters., Inc.*, 358 F.3d 870, 875 (Fed. Cir. 2004).

The Court “should also consider the patent’s prosecution history, if it is in evidence.” *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 980 (Fed. Cir. 1995), *aff’d*, 517 U.S. 370; *Cont’l Cirs.*, 915 F.3d at 796 (same). The prosecution history may “demonstrat[e] how the

inventor understood the invention and whether the inventor limited the invention in the course of prosecution” *SpeedTrack, Inc. v. Amazon.com*, 998 F.3d 1373, 1377 (Fed. Cir. 2021) (quoting *Phillips*, 415 F.3d at 1317).

The Court may “need to look beyond the patent’s intrinsic evidence and to consult extrinsic evidence in order to understand, for example, the background science or the meaning of a term in the relevant art during the relevant time period.” *Teva*, 574 U.S. at 331. “Extrinsic evidence consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises.” *Markman*, 52 F.3d at 980; *Phillips*, 415 F.3d at 1317 (same). Extrinsic evidence may be useful, but it is “less significant than the intrinsic record in determining the legally operative meaning of claim language.” *Cont’l Cirs.*, 915 F.3d at 799 (internal quotation marks and citations omitted). However, “[p]atent documents are written for persons familiar with the relevant field Thus resolution of any ambiguity arising from the claims and specification may be aided by extrinsic evidence of usage and meaning of a term in the context of the invention.” *Verve, LLC v. Crane Cams, Inc.*, 311 F.3d 1116, 1119 (Fed. Cir. 2002); see *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 899 (2014) (explaining that patents are addressed “to those skilled in the relevant art”).

B. Definiteness/Indefiniteness

Section 112 of the Patent Act requires that the claims of a patent “particularly point[] out and distinctly claim[] the subject matter which the inventor . . . regards as the invention.” 35 U.S.C. § 112(b). The “primary purpose of the definiteness requirement” that § 112(b) contains “is to ensure that the claims are written in such a way that they give notice to the public of the extent of the legal protection afforded by the patent, so that interested members of the public, e.g., competitors of the patent owner, can determine whether or not they infringe.” *All Dental*

Prodx, LLC v. Advantage Dental Prods., Inc., 309 F.3d 774, 779-80 (Fed. Cir. 2002) (citation omitted).

“[A] patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention.” *Nautilus*, 572 U.S. at 901. While a “potential infringer” need not “be able to determine *ex ante* if a particular act infringes the claims,” the patentee must “apprise the public ‘of what is still open to them[]’” such that “a person of ordinary skill in the art could determine whether or not an accused product or method infringes the claim.” *Niazi Licensing Corp. v. St. Jude Med. S.C., Inc.*, 30 F.4th 1339, 1346-47 (Fed. Cir. 2022) (citations omitted).

Like claim construction, definiteness is a question of law, but the Court must sometimes render factual findings based on extrinsic evidence to resolve the ultimate issue of definiteness. *See Sonix Tech. Co. v. Publications Int’l, Ltd.*, 844 F.3d 1370, 1376 (Fed. Cir. 2017). “Patent claims are presumed to be valid and definite.” *B.E. Tech., LLC v. Twitter Inc.*, No. CV 20-621-GBW, 2024 WL 579076, at *1 (D. Del. Feb. 13, 2024) (citing 35 U.S.C. § 282). Thus, the challenger must prove indefiniteness by clear and convincing evidence. *See Nippon Shinyaku Co. v. Sarepta Therapeutics, Inc.*, No. CV 21-1015-GBW, 2023 WL 4314485, at *6 (D. Del. July 3, 2023).

II. AGREED-UPON TERMS

The parties have agreed upon the construction of the following claim terms (D.I. 111 at 2):

Claim Term	Agreed-Upon Construction	Court's Construction
“modulator” ’998 Patent: claims 1, 4, 6, 49, 50, 58, 61 ’872 Patent: claims 1, 2, 3, 6, 7, 10, 11, 12, 13, 15, 16, 18, 20, 21, 23, 25, 26, 27	any device which outputs an optical signal with controlled variation of intensity, whether the variation is induced during production of the signal (such as in a semiconductor laser) or whether a signal input from another source is modified	any device which outputs an optical signal with controlled variation of intensity
“mapping/map/mapped/converting” ’998 Patent: claims 1, 13, 14, 45, 46, 47, 49, 58, 63 ’872 Patent: claims 1, 11, 13, 15, 23, 27	selecting or generating a digital output from a set of possible digital outputs for a given digital input from a set of possible digital inputs, wherein decimal values of the set of possible digital outputs and decimal values of the set of possible digital inputs are not identical translating from one representation format to another representation format is not mapping/converting	(verbs) selecting or generating a digital output from a set of possible digital outputs for a given digital input from a set of possible digital inputs, wherein decimal values of the set of possible digital outputs and decimal values of the set of possible digital inputs are not identical

An agreed upon construction is akin to a stipulation. *See United States v. Gillette*, 738 F.3d 63, 75 (3d Cir. 2013) (noting “[a] stipulation is ‘[a] voluntary agreement between opposing parties concerning the same relevant point’”). The parties have not explained whether the Court is bound by the parties’ agreed upon constructions.³ Claim construction is ultimately a question

³ While Cisco contends that estoppel bars the parties from going against the stipulated claim constructions, *see* D.I. 111 at 24 (citing *LizardTech, Inc. v. Earth Res. Mapping, Inc.*, 424 F.3d 1336 (Fed. Cir. 2005)); Tr. at 19:13-19, that argument does not address whether the Court is bound to accept a stipulated construction. The *LizardTech* case that Cisco relies on involved a party that “agreed to the district court’s construction at the time.” 424 F.3d at 1341. This Court has not adopted a claim construction yet. Further, the *LizardTech* court simply noted that, on

of law, *see* 574 U.S. at 326, and generally “[c]ourts are ‘not bound to accept, as controlling, stipulations as to questions of law.’” *Alexsam, Inc. v. IDT Corp.*, 715 F.3d 1336, 1347 n.9 (Fed. Cir. 2013) (quoting *Sanford’s Est. v. Comm’r of Internal Revenue*, 308 U.S. 39 (1939)).

While “the *parties*—not the court—[] chart the course of the litigation,” “[u]nder binding Federal Circuit law, ‘the trial judge has an independent obligation to determine the meaning of the claims, notwithstanding the views asserted by the adversary parties.’” *Astellas Pharma, Inc. v. Sandoz Inc.*, 117 F.4th 1371, 1378 (Fed. Cir. 2024) (first quote); *Alnylam Pharms., Inc. v. Pfizer Pharmacia & Upjohn Co. LLC*, No. CV 22-336-CFC, 2024 WL 4123553, at *3 n.1 (D. Del. Sept. 9, 2024) (second quote) (quoting *Exxon Chem. Pats., Inc. v. Lubrizol Corp.*, 64 F.3d 1553 (Fed. Cir. 1995)). Thus, the Court is “not bound by the parties’ arguments as to claim construction.” *Sony Corp. v. Iancu*, 924 F.3d 1235, 1240 (Fed. Cir. 2019).

A. The Parties’ Agreed upon Constructions Are Adopted in Part

1. The Court Partially Adopts the Parties’ Agreed upon Construction for “Modulator”

The Court partially adopts the parties’ agreed upon construction for the term “modulator.” Specifically, in the context of the identified claims, the Court adopts the construction that modulator refers to “any device which outputs an optical signal with controlled variation of intensity.” D.I. 111 at 2. This construction is consistent with the claims and “might be helpful to a jury.” *Express Mobile, Inc. v. GoDaddy.com, LLC*, No. CV 19-1937-RGA, 2021 WL 2209868, at *10 (D. Del. June 1, 2021). However, as discussed below, the Court declines to adopt the remainder of the parties’ agreed upon construction.

The Court declines to adopt the remainder of the parties’ proposed construction for “modulator,” which states “whether the variation is induced during production of the signal (such

appeal, the party “cannot now argue against that claim construction simply because it resulted in an adverse ruling on summary judgment.” *Id.*

as in a semiconductor laser) or whether a signal input from another source is modified.” D.I. 111 at 2. Essentially, that proposed language gives nonlimiting examples to show the scope of the phrase “optical signal with controlled variation of intensity.” D.I. 111 at 2. While including examples in constructions is sometimes permitted,⁴ the Court is not convinced that the proffered examples improve the claim construction. Thus, the remainder of the proposed construction is not adopted, as it would not “change[] the meaning of the construction [and] would [not] be helpful to a jury.” 2023 WL 5333633, at *4 n.3 (partially adopting proffered claim construction); see *Promptu Sys. Corp. v. Comcast Corp.*, 92 F.4th 1372, 1381 (Fed. Cir. 2024) (“Importantly, a claim construction, if needed at all, should help resolve, not add to, uncertainty in the understanding the finder of fact is to use in applying a claim term.”); *VLSI Tech. LLC v. Intel Corp.*, 53 F.4th 646, 653 (Fed. Cir. 2022) (noting that “a construction that introduces redundancy into a claim is disfavored”).

2. The Court Partially Adopts the Parties’ Agreed upon Construction for “Mapping/Map/Mapped/Converting”

The Court partially adopts the parties’ agreed upon construction for the terms “mapping/map/mapped/converting.” See D.I. 111 at 2. Specifically, to the extent that those terms correspond to verbs in the identified claims, the Court adopts the construction that “mapping/map/mapped/converting” refers to: “selecting or generating a digital output from a set of possible digital outputs for a given digital input from a set of possible digital inputs, wherein decimal values of the set of possible digital outputs and decimal values of the set of possible digital inputs are not identical.” D.I. 111 at 2. That proffered construction apparently reflects the parties’ mutual understanding that “mapping can be either selecting or generating.” Tr. 7:25.

⁴ See *Genzyme Corp. v. Novartis Gene Therapies, Inc.*, No. CV 21-1736-RGA, 2023 WL 5333633, at *2 n.2 (D. Del. Aug. 18, 2023), *reargument denied*, No. CV 21-1736-RGA, 2024 WL 147780 (D. Del. Jan. 12, 2024).

Further, that “construction is consistent with the rules of English grammar and common sense.” *St. Jude Med. v. Volcano Corp.*, No. CV 12-441-RGA, 2014 WL 1619157, at *9 (D. Del. Apr. 22, 2014).

With respect to nouns, however, “[t]he Court is not persuaded [] [] that the[] proposed construction is appropriate as a matter of logic, law, grammar, or technology.” *Enova Tech. Corp. v. Initio Corp.*, No. CV 10-04-LPS, 2013 WL 611315, at *1 n.1 (D. Del. Feb. 19, 2013). Here, Cisco is the most ardent supporter of applying the “selecting or generating” construction.⁵ Yet, Cisco does not explain why, as a matter of law, the Court should fully adopt the “selecting or generating” construction. At best, Cisco contends that the Court should adopt the construction simply because the parties agreed to it. *See* D.I. 111 at 12, 23-24. However, as discussed above, the Court has “an independent obligation to determine the meaning of the claims, notwithstanding the views asserted by the adversary parties.” 2024 WL 4123553, at *3 n.1.

The Court is not persuaded that the “selecting or generating” construction should apply universally. Claim 1 of the ’998 patent, which recites “digital-to-digital mapping maps the plurality of N digital input data bits to a set of M digital output data bits associated with a plurality of voltage values,” exemplifies the Court’s concern. In that context, “the words and grammar [that] the patentee actually used to describe the invention” suggest that digital-to-digital mapping is a noun, not a verb, and that the remainder of the clause is the corresponding predicate. *Callaway Golf Co. v. Acushnet Co.*, No. CV 06-091SLR, 2007 WL 4165415, at *1 (D. Del. Nov. 20, 2007) (noting that “when the science (such as it is) is ambiguous, the claim construction exercise becomes more a matter of semantics”). The ’998 patent’s specification

⁵ This is unsurprising, given that the parties’ stipulated construction is crucial to Cisco’s contention that certain claims are indefinite due to the “wherein . . . mapping maps” clause. *See infra* Part III.A.1.a.

further supports that view. *See* D.I. 111 at 18 (providing “[e]xamples of [digital-to-digital mapping] structures [that] are described in the specification”). Thus, the Court will not adopt the stipulated “selecting or generating” construction with respect to corresponding nouns, such as “digital-to-digital mapping” in claim 1 and claim 58 of the ’998 patent.

Given the parties dispute over the aforementioned “digital-to-digital mapping” term, *see infra* Part III.A.1.a, the Court will “construe [that] term[], and only to the extent necessary to resolve the controversy” over that term. *Voice Tech Corp. v. Unified Pats., LLC*, 110 F.4th 1331, 1341 (Fed. Cir. 2024). The Court construes a “digital-to-digital mapping,” in the context of claim 1 and claim 58 of the ’998 patent, to be: a structure that “maps [a] plurality of N digital input data bits to M digital output data bits.” ’998 patent, 17:32-34, 23:54-55.⁶ As discussed later, *see infra* Part III.A.1.a (rejecting Cisco’s contention that certain claims are indefinite due to the “wherein . . . mapping maps” clause), by clarifying that the “digital-to-digital mapping” is a structure, the Court’s construction “resolve[s] the controversy” surrounding that term. 110 F.4th at 1341.

Except for the “digital-to-digital mapping” term, which was discussed above, the Court is unaware of any “mapping/map/mapped/converting” nouns that are in controversy and require construction. Thus, the Court will not provide express constructions for any remaining nouns corresponding to “mapping/map/mapped/converting” terms. *See Sentient Sensors, LLC v. Cypress Semiconductor Corp.*, No. 19-1868 (MN), 2021 WL 1966406, at *1–2 (D. Del. May 17, 2021) (concluding that the Court “discharged its duty to resolve the parties’ dispute,” after finding a term “need not be construed”).

⁶ “Because [the Court] adopt[s] a construction that neither party proposed, [the Court] [is] open to considering additional argument about it at the summary judgment stage.” *Groove Digital, Inc. v. King.com Ltd.*, No. CV 18-1331-RGA, 2022 WL 16922027, at *3 n.2 (D. Del. Nov. 14, 2022).

The Court declines to adopt the remainder of the proposed construction for “mapping/map/mapped/converting,” which through a negative limitation states: “translating from one representation format to another representation format **is not** mapping/converting.” D.I. 111 at 2 (emphasis added). “[A] negative claim limitation speaks to what an invention **is not** or what it excludes.” *Siemens Gamesa Renewable Energy A/S v. Gen. Elec. Co.*, 605 F. Supp. 3d 198, 210 (D. Mass. 2022); *see Equil IP Holdings LLC v. Akamai Techs., Inc.*, No. CV 22-1531-RGA, 2024 WL 3273494, at *11 (D. Del. July 2, 2024) (“The negative limitation at issue is that the instruction ‘does not itself contain media content for transmission to the user, but which indicates to the content server what media content the content server should transmit to the user.’”). “Negative limitations are not preferred. They are only appropriate in the rare circumstances. Two such circumstances are when a negative limitation is required by lexicography or by disclaimer.” 2024 WL 3273494, at *11. The parties have not explained why a negative limitation is appropriate. Given that it is not readily apparent to the Court why a negative limitation applies, the Court does not adopt the remainder of the proposed construction. *See* 2024 WL 3273494, at *11 (observing that negative limitations “are only appropriate in [] rare circumstances”).

III. DISPUTED TERMS

A. Definiteness

1. Some, but Not All, of the Challenged Claims Withstand *Nautilus* Scrutiny

Claim Term	Ramot's Construction	Cisco's Construction	Court's Construction
"wherein a digital-to-digital mapping maps ..." '998 Patent: claims 1, 4, 6-15, 58, 61-63	Not indefinite	Indefinite	not indefinite; digital-to-digital mapping is a structure that maps a plurality of N digital input data bits to M digital output data bits
"wherein the N bits of the N bit digital input data word are mapped ..." '998 Patent: claims 45-47, 49-54	Not indefinite	Indefinite	indefinite

Cisco contends that the asserted claims of the '998 patent are "invalid as indefinite because each recites, in the same claim, both an apparatus and a method." D.I. 111 at 10 (emphases removed). The burden is on Cisco to demonstrate, by clear and convincing evidence, that the challenged claims "fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention." 2023 WL 4314485, at *6–7 (quoting *Nautilus*, 572 U.S. at 901).

"As relevant to this dispute, the Federal Circuit [in *IPXL Holdings, L.L.C. v. Amazon.com, Inc.*, 430 F.3d 1377 (Fed. Cir. 2005)] [] explained that a claim is indefinite if it 'recites both a system and a method for using that system,' because such a claim 'does not apprise a person of ordinary skill in the art of its scope.'" *KOM Software Inc. v. NetApp, Inc.*,

No. CV 18-160-WCB, D.I. 116 at 31 (D. Del. May 18, 2023) (quoting *IPXL*, 430 F.3d 1377).⁷ “The problem with such claims is that they fail to make it clear to a skilled artisan whether infringement occurs when one creates a system with the capabilities described in the claim, or whether infringement occurs only when the system is used in an infringing manner.” *Id.* at 31-32.

“While a claim directed to both a method and an apparatus may be indefinite, apparatus claims are not necessarily indefinite for using functional language.” *3G Licensing, S.A. v. Blackberry Ltd.*, No. CV 17-82-LPS-CJB, 2018 WL 4375091, at *10 (D. Del. Sept. 13, 2018) (cleaned up) (quoting *MasterMine Software, Inc. v. Microsoft Corp.*, 874 F.3d 1307 (Fed. Cir. 2017)). “[T]he Federal Circuit has found that functional language is not always directed to the performance of steps in a method.” *KOM Software*, No. CV 18-160-WCB, D.I. 116 at 32. Functional language that is “directed to describing the capability of a system or apparatus, or the environment in which the system or apparatus performs . . . does not give rise to an *IPXL* problem.” *Id.* “On the other hand, where the claim language is not directed to the capability of a system or apparatus, but instead recites a step in a method, the court in *MasterMine* recognized that the rule from *IPXL* applies, and that the claim is indefinite.” *Id.*

a. Cisco Has Not Established That Certain Claims Are Indefinite Due to the “Mapping Maps” Term

As discussed below, the Court holds that Cisco has not carried its burden of demonstrating, by clear and convincing evidence, that certain claims are indefinite due to the “wherein . . . mapping maps” clause.

⁷ This opinion is available for download on Lexis, see <https://plus.lexis.com/api/permalink/454a370b-2dc3-436e-9a5c-d2bbd9386b29/?context=1530671>.

1) **“wherein a digital-to-digital mapping maps . . .”**

Cisco has not established, by clear and convincing evidence, that certain claims are indefinite, based on the wherein clause that states “a digital-to-digital mapping maps” A system claim may be indefinite, if it recites a function that “appear[s] in isolation and [is] not ‘specifically tied to structure.’” *KOM Software*, No. CV 18-160-WCB, D.I. 116 at 34 n.6 (discussing *Rembrandt Data Techs., LP v. AOL, LLC*, 641 F.3d 1331 (Fed. Cir. 2011)); see *Ingenico Inc. v. IOENGINE, LLC*, No. CV 18-826-WCB, D.I. 248 at 10-21, 2021 U.S. Dist. Ct. Briefs LEXIS 16797 (D. Del. June 25, 2021) (opinion thoroughly reviewing caselaw regarding indefiniteness due to claiming “both a method and an apparatus or [being] ambiguous in that regard”). Cisco contends that the “wherein a digital-to-digital mapping maps” renders certain claims indefinite, as the “agreed construction of ‘mapping’ and ‘map’” is “a method limitation” that purportedly “is untethered to any structural component.” D.I. 111 at 10-11; see *id.* at 13 (contending that “the agreed claim construction resolved this: the claim element recites an action and nothing else”), 24 (“Ramot cannot read unclaimed structure into this verb-only construction.”); see also D.I. 99 at 5.

Cisco’s contention that the “wherein a digital-to-digital mapping maps” clause renders certain claims indefinite fails, as it rests on the “completely good-faith but incorrect assumption” that the Court would fully adopt the parties’ proposed construction. *McLaughlin v. Richland Shoe Co.*, 486 U.S. 128, 135 (1988). As discussed above, the Court rejected the parties’ attempt to substitute nouns with verbs. Importantly, with respect to the term “digital-to-digital mapping,” the Court construed digital-to-digital mapping as a structure that maps a plurality of N digital input data bits to M digital output data bits. See *supra* Part II.A.2. Consequently, under the Court’s construction, the “wherein a digital-to-digital mapping maps” clause is “distinguishable from the limitation that was found to give rise to indefiniteness in the

Rembrandt case,” as the functionality that Cisco points to is “specifically tied to the [digital-to-digital mapping] structure.” *KOM Software*, No. CV 18-160-WCB, D.I. 116 at 34 n.6. Therefore, the “wherein a digital-to-digital mapping maps” clause “does not present the problem inherent in mixing system (or apparatus) claims with method claims—the difficulty in determining when infringement occurs.” *Id.* at 34. Therefore, claims 1, 4, 6-15, 58, and 61-63 of the ’998 patent have not been shown by Cisco to be indefinite.

“Having found the [“wherein a digital-to-digital mapping maps”] [clause] not indefinite, there is no further material dispute to be resolved by a construction.” *Align Tech., Inc. v. 3Shape A/S*, No. CV 18-1949-LPS, 2020 WL 7695927, at *10 (D. Del. Dec. 28, 2020); *see, e.g., SentiLock, LLC v. Carrier Fire & Sec. Americas LLC*, No. CV 20-520 (MN), 2024 WL 3328495, at *4 n.2 (D. Del. July 8, 2024); *Cirba Inc. v. VMware, Inc.*, No. CV 19-742-LPS, 2022 WL 608185, at *7–8 (D. Del. Feb. 24, 2022); *Targus Int’l LLC v. Victorinox Swiss Army, Inc.*, No. CV 20-464-RGA, 2021 WL 1737531, at *8–9 (D. Del. May 3, 2021).

b. Cisco Has Established That Certain Claims Are Indefinite Due to the “Are Mapped” Term

As discussed below, the Court holds that Cisco has carried its burden of demonstrating, by clear and convincing evidence, that certain claims are indefinite due to the “wherein . . . are mapped” clause.

1) “wherein the N bits of the N bit digital input data word are mapped . . .”

Cisco has established, by clear and convincing evidence, that certain claims are indefinite, based on the wherein clause that states “wherein the N bits of the N bit digital input data word are mapped” As noted above, a system claim may be indefinite, if it recites a function that “appear[s] in isolation and [is] not ‘specifically tied to structure.’” *KOM Software*, No. CV 18-160-WCB, D.I. 116 at 34 n.6. Contrary to Ramot’s repeated assertion, *see* D.I. 111

at 3, 6-9, 17, 20, the preceding rule can apply to functions that are “not directed to a function performed by a user (as was the case in *IPXL, Katz, and H-W Technology*).” *KOM Software*, No. CV 18-160-WCB, D.I. 116 at 34 n.6; *see TQ Delta, LLC v. 2WIRE, Inc.*, No. CV 13-1835-RGA, 2017 WL 6435334, at *10 (D. Del. Dec. 18, 2017).

Cisco contends that the “wherein the N bits of the N bit digital input data word are mapped” clause renders certain claims indefinite, as “the claim is devoid of any structure for performing the operation.” D.I. 111 at 17; *see* D.I. 111 at 16; D.I. 118-1 at 23; *see also* D.I. 99 at 6. On the other hand, Ramot contends that the “wherein the N bits of the N bit digital input data word are mapped” clause “refers to an aspect of a system, in which, digital bits ‘are mapped.’” D.I. 111 at 21; *see* D.I. 111 at 9 (contending that “there is no reasonable interpretation . . . in which the mapping is not a functional capability of the delivered system”); Tr. 17:19-18:2.⁸ According to Ramot, “there is no ambiguity about how the digital mapping is done or that infringement occurs when the optical modulation system in which the digital bits ‘are mapped’ is created.” D.I. 111 at 22; *see id.* at 18.⁹ As discussed below, Cisco’s contention is persuasive.

The Court holds that claims 45-47 and 49-54 of the ’998 patent are “invalid for indefiniteness [as] [those] claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the

⁸ “Functional language describes something by means of what it does, not by means of what it is.” *3G Licensing, S.A.*, 2018 WL 4375091, at *10.

⁹ After briefing had closed, Ramot for the first time contended that the “structure that maps digital inputs to outputs” is the “one or more electro-absorption signal generation devices.” D.I. 119-1 at 40; *see* Tr. 11:18-13:24, 17:19-18:2. “In this district, a *Markman* hearing is not the time to raise a new claim construction argument. New arguments made at a *Markman* hearing are waived.” *CoolTVNetwork.com, Inc. v. Blackboard Inc.*, No. CV 19-291-LPS-JLH, 2020 WL 6536960, at *5 (D. Del. Nov. 6, 2020) (Hall, J.), *report and recommendation adopted*, No. CV 19-291-LPS-JLH, 2021 WL 2010579 (D. Del. May 20, 2021); *see Sight Scis., Inc. v. Ivantis, Inc.*, No. CV 21-1317-GBW-SRF, 2023 WL 5287215, at *5 n.3 (D. Del. Aug. 17, 2023) (“This Court does not consider new arguments raised for the first time at a *Markman* hearing.”).

scope of the invention.” *Nautilus*, 572 U.S. at 901. Specifically, with respect to those preceding claims, “the problematic limitation” is the “wherein the N bits of the N bit digital input data word are mapped” clause, which “although not directed to a function performed by a user[,] . . . appear[s] in isolation and [is] not ‘specifically tied to structure.’” *KOM Software*, No. CV 18-160-WCB, D.I. 116 at 34 n.6.

Claims 45-47 and 49-54 of the '998 patent are ambiguous about whether their claimed invention has the functionality/capability to perform the “wherein . . . are mapped” clause. Moreover, claims 45-47 and 49-54 of the '998 patent are ambiguous about what structure is tied to the “wherein . . . are mapped” clause. The Court is not convinced by Ramot’s argument that the corresponding structure is the entire claimed invention. *See* D.I. 111 at 18 (“‘An optical modulation system for converting a plurality of input digital data words . . . wherein the N bits of the N bit digital input data word are mapped’ is a structure.”). Ramot’s argument is conclusory and lacks textual support in the claims. Nothing in the claim language suggests that “a component in the system contains the functionality described.” 2018 WL 4375091, at *10. Likewise, nothing in the claim language suggests that the “wherein . . . are mapped” limitation is “a functional limitation on components recited in the claims.” *Wasica Fin. GmbH v. Schrader Int’l, Inc.*, No. CV 13-1353-LPS, 2019 WL 1011321, at *7 (D. Del. Mar. 4, 2019) (distinguishing *Rembrandt*, 641 F.3d 1331).¹⁰ That is what distinguishes claims 45-47 and 49-54 of the '998 patent from the challenged claim in *KOM Software* that withstood indefiniteness scrutiny. *See* No. CV 18-160-WCB, D.I. 116 at 34 n.6.

¹⁰ For example, with respect to the disputed limitation, the drafter did not use “plural indentations to further segregate subcombinations or related steps.” MPEP § 608.01(m); *see Shotkam LLC v. Tachyon, Inc.*, No. CV H-20-1070, 2021 WL 23311, at *4 (S.D. Tex. Jan. 4, 2021) (noting that “indentation [can be] meaningful”).

Thus, given the ambiguity surrounding the “wherein . . . are mapped” clause, claims 45-47 and 49-54 of the ’998 patent “fail to inform, with reasonable certainty, those skilled in the art about” “whether infringement occurs when one creates a system with the capabilities described in the claim, or whether infringement occurs only when the system is used in an infringing manner.” *Nautilus*, 572 U.S. at 901 (first quote); *KOM Software*, No. CV 18-160-WCB, D.I. 116 at 31-32 (second quote).

Having determined that claims 45-47 and 49-54 of the ’998 patent are invalid, the Court finds no further construction of these claims is necessary. *See, e.g., Intell. Ventures I LLC v. AT & T Mobility LLC*, No. CV 12-193-LPS, 2015 WL 1393386, at *22 (D. Del. Mar. 24, 2015) (“Because Claim 16 is indefinite, the Court does not construe the other disputed means-plus-function limitation in the claim.”), *aff’d*, 748 F. App’x 330 (Fed. Cir. 2019); *Intermec Techs. Corp. v. Palm Inc.*, 738 F. Supp. 2d 522, 540 (D. Del. 2010) (observing that “[t]he court did not construe the communications means limitation of claim 1 of the ’678 patent because that claim was held to be invalid as indefinite”), *aff’d*, 466 F. App’x 881 (Fed. Cir. 2012); *Chiron Corp. v. Genentech, Inc.*, 363 F.3d 1247, 1257 (Fed. Cir. 2004) (“Because the ’561 patent is invalid for the reasons noted above, this court need not reach the question of claim construction.”).

B. Disclaimer

Cisco proposes various constructions, based on “Ramot’s statements in [inter partes reviews]¹¹] on related patents to confirm that the claims do not cover analog-driven modulators” (D.I. 111 at 32, 34):

¹¹ “The Leahy–Smith America Invents Act, 35 U.S.C. § 100 *et seq.*, establishes a process called ‘inter partes review.’ Under that process, the United States Patent and Trademark Office (PTO) is authorized to reconsider and to cancel an issued patent claim in limited circumstances.” *Oil States Energy Servs., LLC v. Greene’s Energy Grp., LLC*, 584 U.S. 325, 328–29 (2018). “Proceedings before the Patent Office, including IPRs . . . are properly considered as part of

Claim Term	Ramot's Construction	Cisco's Construction	Court's Construction
“digital output . . .”/“output bits . . .” ’872 patent, claims 1, 11, 13, 15, 23 ’998 patent, claims 1, 45, 58	No construction necessary	“digital output . . .”/“output bits . . .” “for directly driving electrodes of modulator without any mediating digital-to-analog converter”	No construction necessary

Specifically, Cisco points to an inter partes review involving U.S. Patent No. 10,270,535 (the “’535 patent”), which Cisco represents is a related patent that “shares the same specification” as the ’872 patent and ’998 patent. D.I. 111 at 38.¹² The remainder of this paragraph, of this Memorandum Opinion, chronologically lists overlaps in timing and contents of the ’535 patent, the ’872 patent, and the ’998 patent. According to the ’535 patent’s cover, it was filed in December 2018 and issued in April 2019. According to the ’872 patent’s cover, it was filed in August 2019. The ’872 patent’s specification states it “incorporate[s] by reference” “[t]he contents of” “U.S. patent application Ser. No. 16/234,635 filed on Dec. 28, 2018, now U.S. Pat. No. 10,270,535.” ’872 patent, 1:5-28. Cisco filed an inter partes review petition against claim 1 and claim 2 of the ’535 patent in November 2019. *See Cisco Sys. v. Ramot at Tel Aviv Univ., Ltd.*, No. IPR2020-00123, Paper 2 at 21, 2019 PAT. APP. FILINGS LEXIS 20934 (P.T.A.B. Nov. 5, 2019). In February 2020, Ramot submitted a preliminary response to Cisco’s inter partes review petition. *See* No. IPR2020-00123, Paper 8, 2020 PAT. APP. FILINGS LEXIS 5739 (P.T.A.B. Feb. 18, 2020). In May 2020, the Patent Trial and Appeal Board denied Cisco’s inter partes review petition. *See* No. IPR2020-00123, Paper 14, 2020 Pat. App. LEXIS

th[e] intrinsic evidence.” *Schwendimann v. Neenah, Inc.*, No. CV 19-361-LPS, 2021 WL 466876, at *2 (D. Del. Feb. 9, 2021).

¹² The Court does not consider a separate inter partes review that Cisco identifies only in a cursory footnote. *See Chervon (HK) Ltd. v. One World Techs., Inc.*, No. CV 19-1293-GBW, 2022 WL 14812531, at *2 (D. Del. Oct. 26, 2022).

13152 (P.T.A.B. May 15, 2020). According to the '998 patent's cover, it was filed on September 22, 2021. The '998 patent's specification states it "incorporate[s] by reference" "[t]he contents of" "U.S. patent application Ser. No. 16/234,635 filed on Dec. 28, 2018, now U.S. Pat. No. 10,270,535." '998 patent, 1:6-30. According to the '872 patent's cover, it was issued on September 28, 2021. According to the '998 patent's cover, it was issued in May 2022.

Cisco contends that the claims of the '872 patent and '998 patent are subject to "clear and unmistakable disclaimers [during IPRs] that the digital output of the 'mapping' or 'converting' elements is for directly driving the electrodes of the modulator, without any mediating digital-to-analog converter." D.I. 111 at 38 (emphases removed). "The Federal Circuit has held that the doctrine of prosecution disclaimer equally applies in IPR proceedings." *Int'l Bus. Machines Corp. v. Rakuten, Inc.*, No. CV 21-461-GBW, 2023 WL 3750906, at *12 (D. Del. June 1, 2023); *see Aylus Networks, Inc. v. Apple Inc.*, 856 F.3d 1353, 1362 (Fed. Cir. 2017) ("[W]e hold that statements made by a patent owner during an IPR proceeding, whether before or after an institution decision, can be considered for claim construction and relied upon to support a finding of prosecution disclaimer."); *see also Sequoia Tech., LLC v. Dell, Inc.*, 66 F.4th 1317, 1327 (Fed. Cir. 2023); *KOM Software*, No. CV 18-160-WCB, D.I. 116 at 13.

"Prosecution disclaimer 'preclud[es] patentees from recapturing through claim interpretation specific meanings disclaimed during prosecution.' '[F]or prosecution disclaimer to attach, our precedent requires that the alleged disavowing actions or statements made during prosecution be both clear and unmistakable.'" 2023 WL 3750906, at *12 (citations omitted) (quoting *Omega Eng'g, Inc. v. Raytek Corp.*, 334 F.3d 1314 (Fed. Cir. 2003)); *see Hill-Rom Servs., Inc. v. Stryker Corp.*, 755 F.3d 1367, 1372 (Fed. Cir. 2014) (surveying caselaw on disclaimers/ disavowal). "When determining whether disclaimer applies, we consider the

statements in the context of the entire prosecution.” *Tech. Properties Ltd. LLC v. Huawei Techs. Co.*, 849 F.3d 1349, 1357-58 (Fed. Cir. 2017).

The prosecution disclaimer doctrine is related to other claim construction rules and principles. For example, the prosecution disclaimer “inquiry is related to but distinct from the inquiry into what the prosecution history shows about a relevant artisan’s understanding of the claim language in context.” *K-fee Sys. GmbH v. Nespresso USA, Inc.*, 89 F.4th 915, 923 (Fed. Cir. 2023) (analyzing whether patentee acted with “sufficient clarity” before a foreign patent office, such that a purported disclaimer should be imported to a related U.S. patent). Moreover, “[t]he same general tenets that apply to prosecution history estoppel apply to prosecution history disclaimer.” *Trivascular, Inc. v. Samuels*, 812 F.3d 1056, 1063 (Fed. Cir. 2016).

Prosecution disclaimers can sometimes extend across patent family members. *See, e.g., Trading Techs. Int’l, Inc. v. Open E Cry, LLC*, 728 F.3d 1309, 1323 (Fed. Cir. 2013); *Stryker Corp. v. Zimmer, Inc.*, 837 F.3d 1268, 1274 (Fed. Cir. 2016); *Vitaworks IP, LLC v. Glanbia Nutritionals (NA), Inc.*, No. CV 19-2259-GBW, 2023 WL 356160, at *7 (D. Del. Jan. 23, 2023). Whether a prosecution disclaimer should extend from one patent to its family members “is [often] less straightforward” than determining the presence of an initial disclaimer. 2021 WL 466876, at *7; *see Sanofi v. Glenmark Pharms. Inc.*, No. CV 14-264-RGA, D.I. 332 at 53-61 (D. Del. Aug. 31, 2016) (discussing prosecution disclaimer doctrine).¹³ On one hand, “the Court should interpret claim[] terms ‘consistently across all the [related] patents.’” 2021 WL 466876, at *7 (quoting *Cap. Mach. Co. v. Miller Veneers, Inc.*, 524 F. App’x 644 (Fed. Cir. 2013)); *see MasterMine*, 874 F.3d at 1312 n.2 (quoting *Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 789 F.3d

¹³ The *Sanofi* opinion is available for download on Lexis, *see* <https://plus.lexis.com/api/permalink/ff57e800-56c2-490a-94e0-cc8ccfdd9125/?context=1530671>.

1335 (Fed. Cir. 2015)) (“We have often held that the meaning of claim terms in one patent can be informed by statements made during prosecution of other patents in the same family. We have explained, for example, that ‘past and future prosecution of related patents may be relevant to the construction of a given claim term.’”). However, the general rule that “a claim term should be construed consistently across related patents . . . does not permit importing terms or limitations into the claims of related patents that do not recite that disputed term.” *Eis, Inc. v. Intihealth Ger GMBH*, No. CV 19-1227-GBW, 2023 WL 346631, at *3 (D. Del. Jan. 9, 2023).

1. Cisco Has Not Demonstrated Clear and Unmistakable Disclaimers

Cisco contends that the claim scope of the ’872 patent and the ’998 patent are narrowed by a purported prosecution disclaimer that Ramot made regarding the ’535 patent, which is an ancestor of the ’872 patent and the ’998 patent. *See* D.I. 111 at 39-43. This Court has previously stated that “it is well-settled that, ‘[i]n general, a prosecution disclaimer will only apply to a subsequent patent if that patent contains the same claim limitation as its predecessor.’” *Sanofi*, No. CV 14-264-RGA, D.I. 332 at 54 (quoting *Regents of Univ. of Minnesota v. AGA Med. Corp.*, 717 F.3d 929 (Fed. Cir. 2013)); *see Acadia Pharms. Inc. v. Aurobindo Pharma Ltd.*, No. 22-CV-1387-GBW, 2023 WL 8622111, at *3 (D. Del. Dec. 13, 2023) (“When a patentee disclaims claim scope in a predecessor patent, that disclaimer binds the patentee’s subsequent patents only if the subsequent patent has the same, or immaterially different, claim limitations as its predecessor.”). Further, this Court has observed that “[t]he sole exception,” to that general rule, “is when the disclaimer is directed to the scope of the invention as a whole, not a particular claim.” *Sanofi*, No. CV 14-264-RGA, D.I. 332 at 54 (quoting *AGA Med. Corp.*, 717 F.3d 929).¹⁴

¹⁴ To the extent that Cisco suggests that (what it refers to as) “same subject matter” disclaimer is separate from the aforementioned general rule and exception, *see* D.I. 111 at 38-39, 44, the Court is not convinced. *See RFID Tracker, Ltd. v. Wal-Mart Stores, Inc.*, 342 F. App’x 628, 630 (Fed.

As discussed below, even assuming *arguendo* that prosecution disclaimers were made regarding the '535 patent, the Court is not convinced that such disclaimers unambiguously apply to the disputed claims of the '872 patent and the '998 patent.

For the reasons discussed below, the Court holds that Cisco has not met its burden of establishing disclaimers in the '872 patent and the '998 patent. Thus, the Court rejects Cisco's proffered constructions that are based on alleged disclaimers.

a. Cisco Has Not Established That Ramot Made “Invention as a Whole” Disclaimers During an Inter Partes Review

As discussed below, the Court holds that Cisco has failed to “demonstrate an ‘unambiguous’ disclaimer, based on ‘clear and unmistakable evidence’ that some of the scope that would otherwise be captured by [] claim[s] [in the '872 patent and the '998 patent] was relinquished during” an IPR proceeding involving the '535 patent. *Abbott Lab'ys v. Lupin Ltd.*, 753 F. Supp. 2d 382, 398 (D. Del. 2010) (citation omitted) (noting the same unambiguous disclaimer requirement “is true of disclaimers made during the prosecution history of a patent in the same family as the patent-in-suit”).

The Court is not convinced by Cisco's argument that “Ramot's disclaimer arguments were ‘directed to the invention as a whole[,]’[] and thus carry forward to the Asserted Patents.” D.I. 111 at 43; *see id.* at 38-39 (contending that “Ramot argued throughout its POPR that its invention as a whole was limited to directly driving electrodes of the modulator without any mediating digital-to-analog converter”). As “[t]he party seeking to invoke prosecution history

Cir. 2009) (emphasis added) (“Prosecution disclaimer *may* also arise from an applicant's statements in a parent patent application if the parent application relates to the same subject matter as the claim language at issue.”). *Vitaworks IP*, which is the case that Cisco relies on (*see* D.I. 111 at 39), used the phrase “same subject matter” in the context of relevance. Cisco assumes, without explanation, that a disclaimer per se extends to any patent claims on the “same subject matter.”

disclaimer[,] [Cisco] bears the burden of proving the existence of a clear and unmistakable disclaimer that would have been evident to one skilled in the art.” *Genuine Enabling Tech. LLC v. Nintendo Co.*, 29 F.4th 1365, 1374 (Fed. Cir. 2022) (quoting *Massachusetts Inst. of Tech. v. Shire Pharms., Inc.*, 839 F.3d 1111 (Fed. Cir. 2016)). “[T]his is a heavy burden.” *Merck KGaA v. Hopewell Pharma Ventures, Inc.*, No. CV 22-1365-GBW-CJB, 2024 WL 3967463, at *2 (D. Del. Aug. 28, 2024). “If the challenged statements are ambiguous or amenable to multiple reasonable interpretations, prosecution disclaimer is not established.” 29 F.4th at 1374. As discussed below, considering the prosecution as a whole, the Court is not convinced that the four challenged statements, which Cisco relies on, prove the existence of a clear and unmistakable disclaimer in the ’872 patent or the ’998 patent.

In support of its argument that the disclaimer is directed to the scope of the invention as a whole, Cisco relies on four excerpts from Ramot’s preliminary response to Cisco’s inter partes review petition against the ’535 patent, which is not asserted in this case. The first two excerpts are found in the introduction of Ramot’s preliminary response to Cisco’s inter partes review petition, where Ramot uses the phrase “the ’535 Patent.” *See* D.I. 111 at 34 (quoting No. IPR2020-00123, Paper 8 at 7-8), 40; *see also* D.I. 118-1 at 37. The Court, however, is not convinced that these two excerpts are “clear and unmistakable evidence” that Ramot relinquished claim scope in the ’872 patent and the ’998 patent. 753 F. Supp. 2d at 398. Importantly, Cisco’s argument assumes that references to the “’535 Patent” are necessarily references to the whole shared patent specification. Given that Cisco has not supported that assumption, there is ambiguity regarding whether “’535 Patent” refers to (a) the shared “written description and drawing of the invention[, or (b)] [the] one or more claims [of the ’535 patent] particularly setting out the invention’s scope.” *Minerva Surgical, Inc. v. Hologic, Inc.*, 594 U.S. 559 (2021).

That ambiguity cuts against importing a disclaimer from the '535 patent to the '872 patent and the '998 patent.

The third excerpt, on which Cisco relies to attempt to support its argument that the disclaimer is directed to the scope of the invention as a whole, is found in Ramot's preliminary response to Cisco's inter partes review petition. Under the heading "The '535 Patent Challenged Claims," Ramot uses the phrase "the '535 specification." *See* D.I. 111 at 41 (quoting No. IPR2020-00123, Paper 8 at 37); *see also* D.I. 118-1 at 35. However, this Court is not persuaded that Ramot's statement, made in the context of "The '535 Patent Challenged Claims," unambiguously disclaims claim scope in the '872 patent and the '998 patent. Given that patent claims that share a specification can be directed to distinct inventions,¹⁵ the Court is not convinced that the excerpt is "clear and unmistakable evidence" that Ramot relinquished claim scope in the '872 patent and the '998 patent. 753 F. Supp. 2d at 398. At this stage, the Court finds credible Ramot's contention that the '872 patent and the '998 patent recite "various claims, each of which necessarily defines its own invention, cover different aspects and embodiments of the multiple inventions disclosed in the shared specification." D.I. 111 at 53.

The fourth excerpt that Cisco relies to attempt to support its argument that the disclaimer is directed to the scope of the invention as a whole is found in Ramot's preliminary response to Cisco's inter partes review petition. There, Ramot uses the phrase "the invention of the '535 Patent." *See* D.I. 111 at 42 (quoting No. IPR2020-00123, Paper 8 at 34), 64; *see also* D.I. 118-1 at 41. The phrases "the invention" and "the present invention" are sometimes (but not always)

¹⁵ *See Chrimar Holding Co., LLC v. ALE USA Inc.*, 732 F. App'x 876, 884 (Fed. Cir. 2018) (nonprecedential), *as amended* (June 1, 2018) ("It is hardly unknown for one set of claims to use language that picks out one among several embodiments, especially where other claims (perhaps in the same or related patents) claim more broadly or focus on other embodiments."); *LadaTech, LLC v. Illumina, Inc.*, 841 F. Supp. 2d 860, 866 (D. Del. 2012).

associated with disclaimers. *See, e.g., MasterObjects, Inc. v. Meta Platforms, Inc.*, No. 2023-1097, 2024 WL 630330, at *6 (Fed. Cir. Feb. 15, 2024) (nonprecedential); *Applications in Internet Time, LLC v. Salesforce, Inc.*, No. 2024-1133, 2024 WL 4456271, at *3 (Fed. Cir. Oct. 10, 2024) (nonprecedential); *Jackson v. Seaspine Holdings Corp.*, No. CV 20-1784-RGA, 2023 WL 5334359, at *5 (D. Del. Aug. 18, 2023); *Eis*, 2023 WL 346631, at *7. However, as this Court has previously recognized, “the Federal Circuit has abjured taking any rigid position with respect to the use of phrases such as ‘according to the invention’ or ‘according to the present invention.’” *Zadro Prod., Inc. v. SDI Techs., Inc.*, No. 17-1406-WCB, 2019 WL 10252726, at *6 (D. Del. June 19, 2019).

Thus, for the same reasons discussed above with respect to the preceding three excerpts, the Court is not convinced that the fourth excerpt is “clear and unmistakable evidence” that Ramot relinquished claim scope in the ’872 patent and the ’998 patent. 753 F. Supp. 2d at 398. Moreover, considered in context, the use of the phrase “the invention of the ’535 Patent” is at worst “vague.” 2023 WL 5334359, at *5 (“Although this language is vague, I do not think there is any disclaimer based on the language.”). Arguably, the fourth excerpt that Cisco relies on refers to “[a] preferred method or embodiment[, and] does not disclaim other embodiments” that are claimed in the ’872 patent and the ’998 patent. *Allergan, Inc. v. Revance Therapeutics, Inc.*, No. CV 21-1411-RGA, 2023 WL 5562417, at *5 (D. Del. Aug. 29, 2023), *reconsideration denied*, No. CV 21-1411-RGA, 2023 WL 7634454 (D. Del. Nov. 14, 2023). Therefore, the Court agrees with Ramot that the excerpt does not clearly and unmistakably disclaim claim scope in the ’872 patent and the ’998 patent. *See* D.I. 111 at 58-59.

b. Cisco Also Has Not Established That Ramot Made Specification Disclaimers

As discussed below, the Court finds that Cisco has failed to “demonstrate an ‘unambiguous’ disclaimer, based on ‘clear and unmistakable evidence’ that some of the scope that would otherwise be captured by [] claim[s] [in the ’872 patent and the ’998 patent] w[ere] relinquished” through the specification. *Abbott Lab’ys*, 753 F. Supp. at 398.

The record is somewhat murky on whether Cisco’s characterization of the specification was intended to support a specification disclaimer argument,¹⁶ as opposed to a prosecution history disclaimer argument. In its opening brief, Cisco contends that “statements [in the specification] limit the claim scope” of the ’872 patent and the ’998 patent. D.I. 111 at 47; *see* D.I. 111 at 34 (alleging that “the specification’s description of ‘the invention’ fully aligns with the[] statements” Ramot made in the IPR proceeding involving the ’535 patent). Ramot responds that “[t]he specification does not limit the claims.” D.I. 111 at 60 (emphasis removed). Cisco does not make a specification disclaimer argument in its sur-reply brief, *see* D.I. 111 at 61-67, or in its “*Markman* Presentation,” *see* D.I. 118-1 at 25-49. In fact, Cisco’s sur-reply suggests that there is no live dispute over specification disclaimer. *See* D.I. 111 at 67. Thus, assuming *arguendo* that Cisco initially raised a specification disclaimer argument, based on the briefing, the Court need not reach that issue. *See, e.g., Victaulic Co. v. ASC Engineered Sols., LLC*, No. CV 20-887-GBW, 2022 WL 17250376, at *5 n.3 (D. Del. Nov. 28, 2022), *appeal dismissed*, No. 2023-2013, 2024 WL 3060300 (Fed. Cir. June 20, 2024); *Est. of Albart by Albart v. Lavastone Cap. LLC*, No. CV 20-608-RGA, 2021 WL 1063339, at *2 (D. Del. Mar. 18, 2021); *Progressive*

¹⁶ “The specification may also reveal an intentional disclaimer or disavowal of claim scope.” *Apple Inc. v. Masimo Corp.*, No. CV 22-1377-JLH, 2024 WL 4441741, at *2 (D. Del. Oct. 8, 2024).

Sterilization, LLC v. Turbett Surgical LLC, No. CV 19-627-CFC, 2020 WL 3071951, at *2 (D. Del. June 10, 2020).

c. Cisco Also Has Not Established Ramot Made “Same Claim” Disclaimers During an Inter Partes Review

As discussed below, the Court is not convinced that claims in the ’872 patent and the ’998 patent are subject to same claim limitation disclaimers, based on Ramot’s statements in the inter partes review of the ’535 patent.

As noted earlier, “disclaimer[s] [can] bind[] the patentee’s subsequent patents [] if the subsequent patent has the same, or immaterially different, claim limitations as its predecessor.” *Acadia Pharms.*, 2023 WL 8622111, at *3. The record is somewhat murky on whether Cisco is making a disclaimer argument based on the similarity of claim limitations between claims in the ’535 patent and claims in the ’872 patent and the ’998 patent.

What Cisco refers to as “same subject matter” disclaimer arguably resembles a same claim limitation disclaimer. For example, Cisco alleges that “Ramot [] tied its disclaimer arguments to the ‘converting’/‘mapping’ limitations” and that “[e]ach Asserted Claim [of the ’872 patent and the ’998 patent] recites a ‘mapping’ or ‘converting’ limitation.” D.I. 111 at 43; *see id.* at 45 (alleging that “each Asserted Claim includes the ‘mapping’/‘converting’ limitation in common with the parent/related patents in connection with which Ramot made its disclaiming arguments”). Also, Cisco contends that claim 1 in each of the three patents has “substantially the same ‘converting’ limitation.” D.I. 111 at 44. Ramot’s briefing also addresses the issue of same claim limitation disclaimers. *See* D.I. 111 at 55-56 (“Cisco makes little to no effort to compare the claims on the modulator-driving elements that are the subject of its alleged disclaimers—providing two sentences and an oddly highlighted chart of some of them. This cannot meet the ‘substantially the same’ limitation requirement for finding disclaimer.”); *see also* D.I. 119-1 at

61-80 (emphasis removed) (contending that “[t]he claims here are materially different from those alleged to be disclaimed”). Therefore, the Court will evaluate whether Cisco has proven, by “clear and unmistakable evidence,” that Ramot relinquished claim scope in the ’872 patent and the ’998 patent, based on disclaimers of same, or immaterially different, claim limitations. 753 F. Supp. 2d at 398.

“When evaluating whether two claim limitations are the same, the ‘appropriate focus is on the scope of the claim element, not the meaning of particular words in isolation.’” *Reckitt Benckiser LLC v. Aurobindo Pharma Ltd.*, No. CV 14-1203-LPS, 2016 WL 6542724, at *2 (D. Del. Nov. 3, 2016) (quoting *AGA Med.*, 717 F.3d 929). Below the Court discusses three opinions that address when a claim limitation is deemed similar enough to apply a same claim disclaimer.

An example of “immaterial differences” in claim limitations is found in *Elkay Mfg. Co. v. Ebco Mfg. Co.*, 192 F.3d 973 (Fed. Cir. 1999). *AGA Med.*, 717 F.3d at 944 (citing *Elkay Mfg.*). In *Elkay Mfg.*, the Federal Circuit addressed whether a limitation found in the claim of one patent extended to a claim in a second patent that “stem[med] from the same genus” as the first patent. 192 F.3d at 980. The “disputed limitation” recited in claim 1 of the first patent was “*an upstanding feed tube . . . to provide a hygienic flow path for delivering liquid from . . . and for admitting air . . . into said container . . .*” 192 F.3d at 975–76 (emphasizing portion of “Claim 1 of the ’531 patent”). Claim 1 of the second patent “include[d] the limitation ‘an upstanding feed probe ... to provide a hygienic flow path for delivering liquid from ... and for admitting air ... into said container.’” 192 F.3d at 976 (quoting “claim 1 of the ’855 patent”). The *Elkay Mfg.* court remarked that “[t]he relevant portion of claim 1 of the ’855 patent [(i.e., the second patent)] is identical to the above-quoted limitation in claim 1 of the ’531 patent [(i.e., the first patent)]

with the exception that the feed tube in the '531 patent is described as a feed probe in the '855 patent.” 192 F.3d at 979. Ultimately, the *Elkay Mfg.* court “h[eld] that Elkay’s relinquishment of a potential construction of the feed tube limitation in claim 1 of the '531 patent to include separate feed tubes for liquid and air applies to the feed probe limitation in claim 1 of the '855 patent.” 192 F.3d at 980.

An example of “significantly different claim limitations” is found in *Digital-Vending Servs. Int’l, LLC v. Univ. of Phoenix, Inc.*, 672 F.3d 1270 (Fed. Cir. 2012). *AGA Med.*, 717 F.3d at 943–44 (discussing *Digital-Vending Servs.*). In *Digital-Vending Servs.*, the Federal Circuit addressed whether a limitation in a first set of claims (“claims 1–3 and 7–15 of the '221 application[, which] eventually issued as claims of the '014 patent”) extended to a second set of claims (“claims 16–37[, which] later issued as claims of the '573 patent”) in a related, divisional patent. 672 F.3d at 1276–77.¹⁷ According to the USPTO, the first set of claims in *Digital-Vending Servs.* “were drawn to ‘managing content in a shared environment through a security manager and a funds flow manager,’ while [the] [second set of claims] were drawn to a distinct invention involving a ‘preregistered user accessing content that contains previously treated critical portion.’” 672 F.3d at 1272 (quoting J.A.). The whole first set of claims and part of the second set of claims “explicitly require[d] ‘at least one registration server, each registration server comprising a remote registration manager and a registration database for new user registration, and each registration server being further characterized in that it is free of content managed by the architecture.’” 672 F.3d at 1274–75. A portion of the second set of claims

¹⁷ “[A] divisional application contains an identical disclosure to its parent application’ and ‘is defined as a later application for an independent or distinct invention, carved out of a pending application and disclosing and claiming only subject matter in the earlier or parent application.’” *BASF Corp. v. Enthone, Inc.*, 749 F. App’x 978, 985 n.4 (Fed. Cir. 2018) (quoting *Pfizer, Inc. v. Teva Pharm. USA, Inc.*, 518 F.3d 1353 (Fed. Cir. 2008)).

(specifically, “claims 13–22 of the ’573 patent”), however, “[d]id not contain the phrase ‘registration server.’” 672 F.3d at 1275; *see id.* at 1277 (“Claims 13–22 of the ’573 patent do not contain the words ‘registration server’ but require a ‘registered user.’”). Ultimately, the *Digital-Vending Servs.* court “decline[d] to read the ‘free of content managed by the architecture’ limitation that is explicitly recited in various claims into the stand-alone phrase ‘registration server.’” 672 F.3d at 1277.

Another example of “a subsequent limitation that contained ‘materially’ different claim language” is found in *Saunders Grp., Inc. v. Comfortrac, Inc.*, 492 F.3d 1326 (Fed. Cir. 2007). *AGA Med.*, 717 F.3d at 944 (citing *Saunders Grp.*). In *Saunders Grp.*, the Federal Circuit addressed whether a limitation found in the claim of one patent (“the ’174 patent”) extended to a claim in a second patent (“the ’690 patent”), which “was a continuation of the application that led to the” first patent. 492 F.3d at 1330, 1334. “All the claims in the ’174 patent [i.e., the first patent] explicitly require[d] a pneumatic cylinder having at least one pressure activated seal.” 492 F.3d at 1329. The second patent “omitted any reference to a ‘pressure activated seal’ in two of the independent claims (claims 1 and 16) and in most of their dependent claims.” 492 F.3d at 1330; *see id.* (“The ‘pressure activated seal’ limitation was explicitly included in two other independent claims (claims 14 and 15) and in two of the claims that depended from claim 1 (claims 6 and 7).”), 1333 (“[A]ll the claims in the ’174 patent [(i.e., the first patent)] explicitly require at least one pressure activated seal while the ’690 patent [(i.e., the second patent)] omits that language from the asserted claims.”). Ultimately, the *Saunders Grp.* court held that “any arguments in the prosecution history of the ’174 patent that distinguish prior art based on the presence or absence of a pressure activated seal are inapplicable to the ’690 patent.” 492 F.3d at 1334.

Returning to the claims at issue, the Court is not convinced that Cisco has shown the claims are sufficiently similar to apply same claim limitation disclaimers. The Court agrees with Ramot that, with respect to the issue of same claim limitation disclaimers, Cisco has not made sufficient “effort to compare the claims.” D.I. 111 at 55. At best, Cisco has compared one claim of the ’535 patent with claim 1 of both the ’872 patent and the ’998 patent. However, even those comparisons are lacking, as they fail to convince the Court that at most there exist “immaterial differences” between pertinent claim limitations. *AGA Med.*, 717 F.3d at 944. Given Cisco’s burden on the issue of disclaimers, the Court need not decide whether “Ramot [c]an[] [s]how ‘[m]aterial [d]ifferences.’” D.I. 111 at 65 (emphasis removed).

Having rejected each of Cisco’s disclaimer arguments, the Court finds that no additional construction is necessary. *See, e.g., ActiveVideo Networks, Inc. v. Verizon Commc’ns, Inc.*, 694 F.3d 1312, 1326 (Fed. Cir. 2012) (“ActiveVideo’s proposed construction erroneously reads limitations into the claims and the district court properly rejected that construction and resolved the dispute between the parties.”); *Immersion Corp. v. Motorola Mobility LLC*, No. 17-CV-1081-RGA, 2018 WL 5294508, at *5 (D. Del. Oct. 25, 2018) (“I do not think Defendants have shown an ‘unequivocal’ surrender warranting their proposed construction. Therefore, I reject Defendants’ construction and find no construction necessary.”); *Sentient Sensors*, 2021 WL 1966406, at *1–2 (concluding that the Court “discharged its duty to resolve the parties’ dispute,” after finding a term “need not be construed”).

IV. CONCLUSION

The Court will adopt the parties’ agreed upon constructions in part and construe the disputed claim terms as described above. The Court will issue an Order consistent with this Memorandum Opinion.

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

CISCO SYSTEMS INC. and
ACACIA COMMUNICATIONS, INC.,

Plaintiffs,

v.

RAMOT AT TEL AVIV UNIVERSITY
LTD.,

Defendant.

C.A. No. 21-1365-GBW

CISCO SYSTEMS INC. and
ACACIA COMMUNICATIONS, INC.,

Plaintiffs,

v.

RAMOT AT TEL AVIV UNIVERSITY
LTD.,

Defendant.

C.A. No. 22-674-GBW (consolidated)

ORDER

At Wilmington this 12th day of November, 2024:

Consistent with the Memorandum Opinion issued this date, **IT IS HEREBY ORDERED** that the Court construes the below claim terms of U.S. Patent Nos. 11,133,872 (the “872 patent”) and 11,342,998 (the “998 patent”) as follows:

Claim Term	Court's Construction
Agreed-Upon Terms	
“modulator” ’998 Patent: claims 1, 4, 6, 49, 50, 58, 61 ’872 Patent: claims 1, 2, 3, 6, 7, 10, 11, 12, 13, 15, 16, 18, 20, 21, 23, 25, 26, 27	any device which outputs an optical signal with controlled variation of intensity
“mapping/map/mapped/converting” verbs ’998 Patent: claims 1, 13, 14, 45, 46, 47, 49, 58, 63 ’872 Patent: claims 1, 11, 13, 15, 23, 27	selecting or generating a digital output from a set of possible digital outputs for a given digital input from a set of possible digital inputs, wherein decimal values of the set of possible digital outputs and decimal values of the set of possible digital inputs are not identical
Disputed Terms	
“wherein a digital-to-digital mapping maps ...” ’998 Patent: claims 1, 4, 6-15, 58, 61-63	not indefinite; digital-to-digital mapping is a structure that maps a plurality of N digital input data bits to M digital output data bits
“wherein the N bits of the N bit digital input data word are mapped ...” ’998 Patent: claims 45-47, 49-54	indefinite
“digital output . . .”/“output bits . . .” ’872 Patent: claims 1, 11, 13, 15, 23 ’998 Patent: claims 1, 45, 58	No construction necessary

GREGORY B. WILLIAMS
UNITED STATES DISTRICT JUDGE