IN THE UNITED STATES DISTRICT COURT FOR THE EASTERN DISTRICT OF TEXAS MARSHALL DIVISION

GREENTHREAD, LLC,	§
Plaintiff,	\$ \$ \$
V.	§ CIVIL ACTION NO. 2:23-CV-00212-JRG
OMNIVISION TECHNOLOGIES, INC.,	§ (LEAD CASE) § 8
Defendant.	3
V.	§ CIVIL ACTION NO. 2:23-CV-00157-JRG
TEXAS INSTRUMENTS INC.,	\$ \$
Defendant.	§

MEMORANDUM OPINION AND ORDER

Before the Court are two related discovery motions in Lead Case No. 2:23-cv-212. First is Defendant OmniVision Technologies Inc.'s ("OmniVision") Motion to Compel Greenthread's Compliance with P.R. 3-1 and Strike Uncharted Products (the "Motion to Strike"). (Dkt. No. 85.) Having considered the Motion to Strike and the subsequent briefing, the Court finds that the Motion to Strike should be **DENIED**.

Second is Plaintiff Greenthread, LLC's ("Greenthread") Motion to Compel OmniVision to Remove Improper Confidential Designations (the "Motion to Compel"). (Dkt. No. 94.) Having considered the Motion to Compel and the subsequent briefing, the Court finds that the Motion to Compel should be **DENIED WITHOUT PREJUDICE**.

I. BACKGROUND

The Asserted Claims in this case relate to the concentration and location of chemicals called "dopants" in semiconductor devices. For example, Claim 1 of the '842 patent states:

A semiconductor device, comprising:

a substrate of a first doping type at a first doping level having first and second surfaces; a first active region disposed adjacent the first surface of the substrate with a second doping type opposite in conductivity to the first doping type and within which transistors can be formed;

a second active region separate from the first active region disposed adjacent to the first active region and within which transistors can be formed;

transistors formed in at least one of the first active region or second active region; and at least a portion of at least one of the first and second active regions having at least one graded dopant concentration to aid carrier movement from the first surface to the second surface of the substrate.

(Dkt. No. 1-3 at 4:45-60.) The dopant concentration in a semiconductor product is not information that is ordinarily available to the public, but such can be determined through expensive reverse engineering.

A. Greenthread's Infringement Contentions

Greenthread served its P.R. 3-1 infringement contentions on OmniVision on July 6, 2023. Greenthread identified over 200 Accused Products by their model numbers based on publicly available information from OmniVision's website. The contentions include an infringement chart for a single exemplary product, the OmniVision OV24A1Q image sensor (the "OV24A1Q"), and Greenthread contends that the Accused Products are any product by OmniVision that "comprise[s] or consist[s] of the same or similar structures, features, or functionalities as the exemplary [product]." (Dkt. No. 85-2 at 3-4.) Greenthread's claim chart primarily relies on a report detailing the reverse engineering of OmniVision's OV24A1Q product (the "Tech Insights Report"). (*Id.*); (Dkt. No. 37 at 4.)

OmniVision previously moved to dismiss this case under Rule 12(b)(6), arguing that Greenthread's claim chart attached to the Complaint did not sufficiently notify OmniVision of its infringement theories, and that the chart definitively proved that some accused features were not

present in the Accused Products. (*See* Dkt. No. 34.) The Court denied that motion. (Dkt. No. 90.) The claim chart at issue in the Motion to Strike is similar to the one attached to the Complaint. Both primarily rely on the reverse engineering of the OV24A1Q as presented in the Tech Insights Report and follow the same claim-by-claim analysis. However, the claim chart attached to the infringement contentions also includes extensive annotations and analysis not found in the chart attached to the Complaint which further identifies the accused features and clarifies how such features infringe the Asserted Claims.

B. The Parties' Discovery Efforts

The parties began negotiating the review of "Highly Sensitive Process Information" ("Process Information") at least as of October 4, 2023. (Dkt. No. 93-3.) "Process Information" is any material that includes highly sensitive and proprietary process flows, recipes, or chip-level schematics. (*Id.* at 7.) Specifically, Greenthread sought production of "the doping profiles of the products identified in the infringement contentions" for the purposes of creating updated infringement contentions. (*Id.* at 23.) Greenthread inquired multiple times as to the time and location that Process Information would be made available for review. (*Id.*) OmniVision refused to provide a concrete answer, insisting that it was unable to make such disclosures without first receiving more detailed infringement contentions detailing Greenthread's infringement theories. (*See id* at 27-28.) OmniVision also represented that "[a]s a general rule, OmniVision does not have access to doping profiles" as that was "confidential information of the foundry."

OmniVision's P.R. 3-4(a) disclosures were due October 16, 2023. However, OmniVision did not provide the address at which Process Information could be viewed until October 30—two weeks after the deadline and nearly a month after OmniVision had first reached out attempting to schedule review of such information. (*Id.* at 11.) OmniVision explained that the delay was due to the lack of clarity regarding Greenthread's infringement contentions. (*Id.* at 15.)

According to Greenthread, upon reviewing the Process Information, Greenthread discovered the documents contained "*lots* of information about the doping in its products." (Dkt. No. 94 at 3) (emphasis in original). Further, according to Greenthread, none of the documents it reviewed appeared to meet the definition of "Process Information." (*Id.*)

After review was completed, Greenthread requested printouts of 123 of the 5,000 documents that had been made available for review. OmniVision responded that it "objects to the production of all of these files in their entirety." (Dkt. No. 93-3 at 9.) When asked for the basis of the objection, OmniVision explained that 123 files was "much more than we expected," and it stated that Greenthread was "not complying with the terms of the protective order." (*Id.* at 7.) Specifically, OmniVision argued that Greenthread was seeking to "print out Process Material as an alternative to reviewing Process Material electronically on the stand-alone computer." (*Id.*) OmniVision also objected to the relevance of the documents, again pointing to its lack of understanding of Greenthread's infringement theory from Greenthread's infringement contentions. (*Id.*) Finally, OmniVision objected that the request was not "reasonable" as some documents were "clearly seeking more than 20% of the process flow." (*Id.* at 3.)

On November 16, 2023, the parties met and conferred to resolve this dispute. (Dkt. No. 85-4 at 2.) Following the meet and confer, OmniVision agreed to produce 44 of the 123 documents under the Attorney's Eyes Only ("AEO") designation, but it maintained its objections to printing the other 79 documents. (*Id.* at 4.) OmniVision memorialized the meet and confer in a letter dated November 17, 2023. Greenthread never responded to the letter.

Greenthread also communicated its intent to have its expert reviewing documents starting "on Friday, December 15, 2023 . . . and continuing daily over the following week." (Dkt. No. 94 at 4.) However, according to Greenthread, a "miscommunication" prevented its expert from

starting Friday, December 15, 2023. When the expert arrived at OmniVision's facility the following Monday, he was turned away because OmniVision did "not have the staff available to supervise the inspection." (*Id.*)

C. The Court's Protective Order

Paragraph 16 of the Protective Order governs the disclosure of Process Information. (Dkt. No. 52 at 7-8.) The protections afforded to Process Information are analogous to the "source code" protections in the Court's model order. (*Id.* at 7-8.) Specifically, Process Information must be initially reviewed by the receiving party in person on a stand-alone computer but can be printed. (*Id.*) Further, like the Court's model order, there is no set limit to the number printouts that a party may request, so long as the requested number of printouts is "reasonable." (*See id* at 10-11.) The parties also agreed to an extra limitation concerning the printing of Process Information that is not found in the Court's model order. A request for printouts that include more than "20% of the process flow steps for each process" triggers a requirement for the parties to meet and confer over whether such a request is "reasonable." (*Id.* at 11.) If the parties cannot resolve the dispute, then either Party may seek an order from the Court. (*Id.*)

Paragraph 24 of the Protective Order provides that a party may seek to have the designation of confidential materials withdrawn or modified. Specifically, it states that a "Party may request in writing to the other Party that the Designation given to any specifically identified DESIGNATED MATERIAL be modified or withdrawn. If the designating Party does not agree to redesignation within ten (10) days of receipt of the written request, the requesting Party may apply to the Court for relief Upon any such application to the Court, the burden shall be on the designating Party to show why its classification is proper." (*Id.* at 17.)

II. LEGAL STANDARD

"Local Patent Rule 3-1 requires a party claiming infringement to identify each accused product in its infringement contentions." *Intellectual Ventures II LLC v. FedEx Corp.*, No. 2:16-cv-00980, 2017 WL 4812436, at *2 (E.D. Tex. Oct. 25, 2017) (quoting *Tivo Inc. v. Samsung Elecs. Co.*, No. 2:15-CV-1503, 2016 WL 5172008, at *1 (E.D. Tex. 2016)). "The purpose of P.R. 3-1 infringement contentions is to provide reasonable notice to an accused infringer of the accused products." *Revolaze LLC v. J.C. Penney Corp. Inc.*, No. 2:19-cv-00043, 2020 WL 2220158, at *3 (E.D. Tex. May 6, 2020). "This notice allows the accused infringer to conduct its own discovery and prepare its defense." *Id.*

P.R. 3-6(b) allows a party to supplement its infringement contentions "by order of the Court, which shall be entered only upon a showing of good cause." P.R. 3-6(b). The Court considers four factors when determining good cause: "(1) the explanation for the failure to meet the deadline; (2) the importance of the thing that would be excluded if the proposed amendment is not allowed; (3) potential prejudice in allowing the thing that would be excluded; and (4) the availability of a continuance to cure such prejudice." *Intellectual Ventures II*, 2017 WL 4812436, at *2 (citing *Packet Intelligence LLC v. NetScout Sys.*, No. 2:16-CV-230, 2017 WL 2531591, at *1 (E.D. Tex. April 27, 2017)).

III. DISCUSSION

A. OmniVision's Motion to Strike Greenthread's Infringement Contentions (Dkt. No. 85)

OmniVision moves to strike Greenthread's infringement contentions on two grounds. First, OmniVision argues that Greenthread has not put OmniVision on notice of its infringement theories because it has not sufficiently identified what structures infringe the Asserted Claim elements.

Second, OmniVision argues that Greenthread fails to sufficiently explain how the OV24A1Q is representative of all Accused Products. The Court addresses each argument in turn.

1. Greenthread's Identification of the Accused Structures

OmniVision argues that Greenthread's chart of the OV24A1Q fails to identify relevant features of the Asserted Claims and thus fails to adequately notify OmniVision of Greenthread's infringement theories. (Dkt. No. 85 at 6.) Specifically, OmniVision contends that Greenthread fails to identify what structures in the OV24A1Q infringe the following claim elements:

- a "substrate of a first doping type at a first doping level having first and second surfaces";
- the "first active region";
- the "second active region";
- "transistors formed in the at least one of the first active region or second active region";
- a "graded dopant concentration to aid carrier movement from the first surface to the second surface of the substrate" in the first or second active regions."

For example, OmniVision contends that there are two available doping types: P-type or N-type. In one picture of its chart, Greenthread identifies with arrows an N-doped photodiode region as the "substrate" but appears to point to P-type areas as the "first surface" and "second surface," despite the claim requiring a "substrate of a first doping type." (Dkt. No. 85 at 8.) OmniVision argues that it is unclear what structure Greenthread accuses of being the "substrate" and whether the "first doping type" is "P" or "N." (*Id.*)

Greenthread argues in response that "[OmniVision] appears to believe either that (1) the substrate of the *entire* device must be *entirely* P or *entirely* N and/or (2) that the 'first doping type' refers to uniform silicon before structures like transistors are built in it, *i.e.*, before the chip was made, sold, and reverse engineered. Both are claim constructions introducing new limitations."

(Dkt. No. 93 at 9.) Nonetheless, when OmniVision sought clarification as to Greenthread's contentions, Greenthread answered, "[b]ased on what we take to be your claim construction, the 'substrate,' as we believe you understand it, is P." (Dkt. No. 93-3 at 20.) Greenthread contends that OmniVision's arguments are best left for claim construction, at which point, Greenthread can also amend its infringement contentions, if necessary, under P.R. 3-6. (*Id.* at 10.)

In another example, OmniVision argues that because the "first active region" limitations are defined with respect to the "substrate" limitations, Greenthread's inability to identify the "substrate" or its "first doping type" prevents discernment of what is "disposed adjacent" to the "first surface" or if there is a "second doping type opposite in conductivity." For example, in the contentions Greenthread asserts that "the active region is a doped silicon region at the surface of the device (e.g. the source and drain and silicon between them)," but Greenthread's accompanying visuals show three structures—a source, drain and channel—as constituting an "active region." (Dkt. No. 85 at 9.)

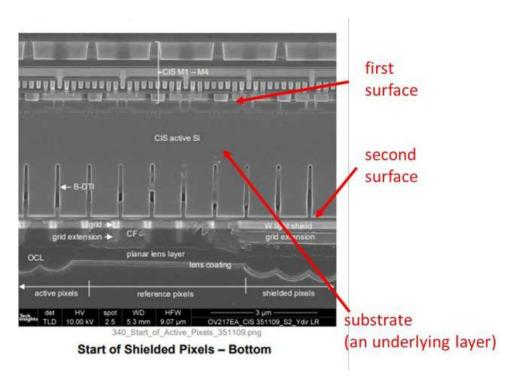
Greenthread responds that OmniVision correctly identifies that an "active region" comprises "the source and drain [of a transistor] and silicon between them," and that by identifying specific transistors, Greenthread necessarily identifies the source, drain, and active region. (Dkt. No. 93 at 10.) Further, Greenthread argues that its extensive annotations spell out in large red letters exactly what features comprise the source, drain, and active regions.

The Court agrees with Greenthread. As a preliminary matter, this Court denied OmniVision's Motion to Dismiss, which raised similar arguments. Specifically, OmniVision moved to dismiss the Complaint on the grounds that Greenthread's claim charts conclusively proved that certain claim elements were absent from the Accused Products. (Dkt. No. 34.) The Court disagreed and found that it "cannot determine whether a 'substrate' or 'second active region' are absent from OmniVision's products without first defining the terms 'substrate' and 'second active

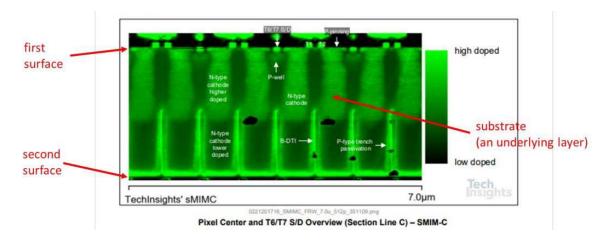
region." (Dkt. No. 90 at 5.) Accordingly, the Court concluded that OmniVision's arguments were best left for claim construction. (*Id.*)

The infringement contentions at issue include the same evidence from the claim charts in the Complaint and add even more detailed annotations and analysis of the structures of the OV24A1Q. Having reviewed Greenthread's infringement contentions, the Court finds that Greenthread identifies the accused features in the OV24A1Q with sufficient specificity to comply with P.R. 3-1.

For example, Greenthread contends that a substrate is an "underlying layer," and it identifies what it considers to be the "substrate," "first surface," and "second surface" in the OV24A1Q with annotations of multiple pictures:

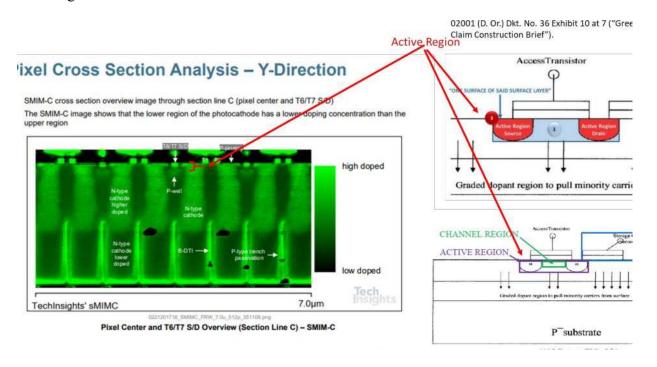


(See e.g., Dkt. No. 85-2.)



(*Id*.)

Greenthread also states that the "active region" is "a doped silicon region at the surface of a semiconductor device (*e.g.*, the source and drain and silicon between them) where a transistor can be formed." (*Id.*) The accompanying visuals identify what Greenthread considers to be the active region:

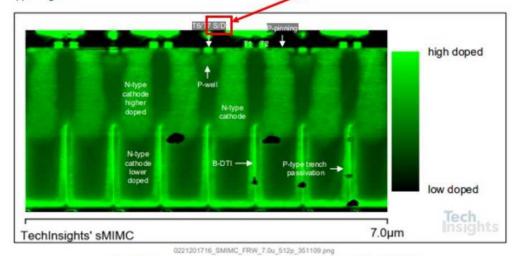


(*Id*.)

Greenthread also identifies what it considers to be the source and the drain:

Pixel Cross Section Analysis - Y-Direction Source/Drain

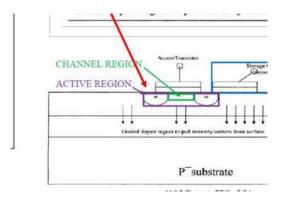
- SMIM-C cross section overview image through section line C (pixel center and To/T7 S/D)
- The SMIM-C image shows that the lower region of the photocathode has a lower doping concentration than the upper region



Pixel Center and T6/T7 S/D Overview (Section Line C) - SMIM-C

(*Id*.)

OmniVision accuses Greenthread of "draw[ing] a box around a text label" to identify the accused features. (Dkt. No. 85 at 10.) However, the box around the text label is simply meant to clarify that "S/D" on the product teardown image means "Source/Drain." It is apparent that Greenthread is not contending that a text label is the Source/Drain, but rather that the feature identified by the text label is the Source/Drain. Such is consistent with its diagrams from prior claim constructions in previous cases:



(*Id*.)

The Court also finds that Greenthread's contentions adequately disclose its theories for how dopant grading aids carrier movement. Greenthread's contentions explain, the "scanning capacitance/microwave impedance microscopy (SCM/sMIM)" used to create the images in Greenthread's charts

electrically characterizes the tested device and generates maps which provide graphical representation of the dopant types and concentrations by measuring carrier movement as they are attracted to or repulsed by the probe. The SCM/sMIM maps taken from OmniVision Accused Products shown herein demonstrate differences in carrier concentration as a function of depth, which generate electric fields within the accused products.

(Dkt. No. 85-2 at 36.)

The Court finds that the infringement contentions include sufficient detail to put OmniVision on notice of Greenthread's infringement theories. Accordingly, the Court finds no compelling reason to strike the infringement contentions on these grounds.

2. Greenthread's Representativeness Allegations

OmniVision also argues that Greenthread's infringement contentions should be stricken with respect to all products but the charted OV24A1Q because Greenthread accuses hundreds of products despite only providing a chart for the OV24A1Q. (Dkt. No. 85 at 11.) OmniVision argues that, to the extent that Greenthread were to believe that additional charts would be materially identical to the OV24A1Q chart, Greenthread must provide such an explanation. However, OmniVision contends that the products are not materially identical. For example, OmniVision points out that Greenthread points to the pixel array portion of CIS die in the OV24A1Q for infringement, but some of the accused products do not have a pixel array. (*Id.*) Further, OmniVision contends that Greenthread conceded that there is no unified infringement theory earlier in the case when it argued, "even if the CIS die transistors don't infringe, the ISP transistors clearly do." (*See id.*; Dkt. No. 37 at 15.) OmniVision argues that Greenthread has not charted the

ISP transistors in the OV24A1Q or any other product that Greenthread contends would alternatively infringe.

Greenthread argues that whether its theories may ultimately be vindicated is an entirely separate matter from whether P.R. 3-1 has been satisfied. (Dkt. No. 93 at 13.) Greenthread argues that it is willing to provide additional charts for additional products, but it contends that such requires discovery that OmniVision refuses to provide. (*Id.*) Greenthread notes that its contentions define "OmniVision Accused Products" and identify more than 200 specific OmniVision products by model number based on publicly available information, and it is not relying on "same or similar functionality" language to "sweep in unidentified products that *could have been* identified with sufficient specificity." (*Id.*) (emphasis in original).

Greenthread argues that public information does not disclose which of OmniVision's products include the features accused of infringement, forcing Greenthread to undertake expensive reverse engineering of the OV24A1Q. Greenthread argues that it "remains willing" and even "wants" to create more infringement charts, but it argues that OmniVision has obstructed its ability to access the important confidential documents that are necessary for Greenthread to create updated infringement contentions. (*Id.* at 5) (emphasis in original).

The Court agrees with Greenthread. The Court has already decided a similar motion pertaining to Member Case No. 2:23-cv-00157. (*See* Dkt. No. 109.) The reasoning from the Court's prior decision applies here.

Greenthread cannot chart the "specific arrangements and properties" of every Accused Product when such information is not publicly available. Further, Greenthread is not required to provide infringement charts for every Accused Product. It is sufficient at this stage that Greenthread has charted a representative product and articulated its theory of how this product is representative of the other Accused Products.

(*Id.* at 7.)

Greenthread has accused specific product models and has articulated its representativeness contentions for the OV24A1Q product. OmniVision may disagree that this product actually infringes or is actually representative of all Accused Products in this case, that this is precisely the type of information that discovery is designed to reveal. The Court does not find that Greenthread's infringement contentions should be stricken on these grounds.

B. Greenthread's Motion to Compel OmniVision to Remove Improper Confidential Designations (Dkt. No. 94)

Greenthread argues that OmniVision has obstructed its ability to obtain discovery necessary for Greenthread to update its infringement contentions. Specifically, Greenthread argues that OmniVision has obstructed its ability to review critical Process Information through dilatory scheduling tactics, improper confidentiality designations, and a blanket refusal to comply with Greenthread's requests for printouts of the Process Information. Accordingly, Greenthread moves to compel OmniVision to:

- (1) remove its improper mass designations of Process Information and make a particularized showing for any documents it actually believes are Process Information;
- (2) promptly provide Greenthread with hard copies of properly designated Process Information Greenthread requests; and
- (3) make any properly designated Process Information available for electronic review at locations convenient to Greenthread's counsel and its expert.

(Dkt. No. 94 at 5.)

OmniVision contends that Greenthread has failed to comply with Local Rule CV-7(h). Greenthread certifies in its Motion to Compel that it met and conferred with opposing counsel on November 16, 2023. However, according to OmniVision, the parties did not discuss whether OmniVision's designations should be modified or withdrawn or discuss modifying the terms of the Protective Order at the November 16, 2023 meet and confer. (Dkt. No. 100 at 2.) OmniVision

contends that the only topic related to this motion that was discussed was "which documents are you going to print, which documents are you not going to print and why," which OmniVision memorialized in a letter to Greenthread the following day, November 17, 2023. (*Id.*) Greenthread never responded to OmniVision's letter and was silent until December 19, 2023 when it filed its Motion to Compel and its response to OmniVision's Motion to Strike.

The Court agrees that Greenthread has not complied with L.R. CV-7(h) and L.R. CV-7(i). The certificate of conference does not include a statement "that the personal conference or conferences required by this rule have been conducted or were attempted, the date and manner of such conference(s) or attempts, the names of the participants in the conference(s), an explanation of why no agreement could be reached, and a statement that discussions have conclusively ended in an impasse, leaving an open issue for the court to resolve." L.R. CV-7(i). Further, it does not appear that the parties engaged in a meet and confer sufficient to comply with L.R. CV-7(h). This is a sufficient reason to deny the motion.

Further, both parties have failed to follow the Court's instructions in the Discovery Order. Greenthread moves to compel OmniVision to modify or withdraw certain confidentiality designations. Per Paragraph 24 of the Protective Order, Greenthread is required to first request, in writing, that OmniVision withdraw or modify the designations and then allow ten (10) days for the parties to come to an agreement before filing any such motion. Greenthread did not do so.

In fact, Greenthread acknowledges that it did not comply with the instructions of Paragraph 24 in a footnote of its Motion to Compel. (*See* Dkt. No. 94 at 2 n.1.) Greenthread contends that the basis for its motion is the fact that the Protective Order prohibits "blanket protections," and it states that the Protective Order "provides a separate process" for challenging the designation of "any *specifically identified*" material. (*Id.*) Greenthread implies that it need not comply with Paragraph

24's requirements because it seeks to have the confidentiality designations modified or withdrawn under a "separate process." According to Greenthread, it cannot comply with Paragraph 24 because of OmniVision's mass designation and refusal to print documents, which prevents Greenthread from making specific identifications."

What Greenthread seeks is a modification or withdrawal of confidentiality designations, which is governed by Paragraph 24 of the Protective Order. Greenthread cannot circumvent the requirements of Paragraph 24 by arguing that it is challenging "blanket" designations instead of "specific" designations. Identifying specific designated materials is not a "separate process" for relief. It is a requirement for a party to move to have designations withdrawn or modified. Greenthread's argument that it is unable to identify specific materials for de-designation is unavailing. Greenthread merely needs to identify which materials it seeks to have the designations withdrawn or modified. Here, that would be the 79 documents designated by OmniVision as Process Information. Greenthread identifies these documents for the Court in its motion. There is no reason why it could not have similarly identified such documents for OmniVision in a written request as the Protective Order instructs.

Conversely, in the same brief that OmniVision accuses Greenthread of failing to comply with the instructions in Paragraph 24, OmniVision itself fails to comply with the instructions concerning the same paragraph. The Protective Order states that any motion seeking relief under Paragraph 24 "shall be treated procedurally as a motion to compel." The Discovery Order entered in this case states "an opposed discovery related motion, *or any response thereto*, shall not exceed seven (7) pages. Attachments to a discovery related motion, *or any response thereto*, shall not exceed five (5) pages." OmniVision filed over twenty pages of attachments with no request to exceed the page limit. (*See* Dkt. Nos. 100-1, 100-2, 100-3, 100-4, 100-5, 100-6.)

Finally, the Court is both persuaded and concerned that the parties are not taking seriously their obligations to meet and confer. Both motions before the Court are based on the far-too-common "chicken and egg" problem where each side insists that they are unable to move without the other side moving first. The information necessary for Greenthread to make more infringement charts is non-public and requires discovery or expensive reverse engineering. OmniVision is moving to strike Greenthread's infringement contentions at the same time that it is refusing to produce and print documents that Greenthread seeks for the very purpose providing OmniVision updated infringement contentions. On the other hand, Greenthread, is engaging in motion practice without following the Court's instructions for doing so and without properly communicating its positions to OmniVision. Both parties are failing to properly communicate and cooperate. The Court reminds both parties that "[a]n unreasonable failure to meet and confer violates Local Rule AT-3 and is grounds for disciplinary action." L.R. CV-7(h).

The Court finds that Greenthread's Motion to Compel (Dkt. No. 94) should be **DENIED**WITHOUT PREJUDICE given the aforementioned procedural defects.

IV. CONCLUSION

For the reasons stated herein, the Court finds that OmniVision's Motion to Strike (Dkt. No. 85) should be and hereby is **DENIED**, and the Motion to Compel (Dkt. No. 94) should be and hereby is **DENIED WITHOUT PREJUDICE**. It is **ORDERED** that the parties shall meet and confer concerning Greenthread's Motion to Compel (Dkt. No. 94.) Barring an agreement by the parties as to Greenthread's requested relief, Greenthread may resubmit its Motion to Compel within thirty (30) days of the issuance of this Order.

So Ordered this

Apr 30, 2024

RODNEY GILSTRAP

UNITED STATES DISTRICT JUDGE