

1 DAVID KEYZER (SB# 248585)
david@keyzerlaw.com
2 LAW OFFICE OF DAVID KEYZER, P.C.
5170 Golden Foothill Parkway
3 El Dorado Hills, CA 95762
Telephone: (916) 243-5259
4 Facsimile: (916) 404-0436
5
6
7

8 UNITED STATES DISTRICT COURT
CENTRAL DISTRICT OF CALIFORNIA
9 SOUTHERN DIVISION

10 MGI DIGITAL TECHNOLOGY S.A.,)	Case No. 8:22-CV-00979-DOC-KES
)	
11 Plaintiff,)	Hon. David O. Carter
)	
12 v.)	Special Master David Keyzer
)	
13 DUPLO U.S.A. CORPORATION,)	
)	SPECIAL MASTER
14 Defendant.)	REPORT AND RECOMMENDATION
)	ON CLAIM COSTRUCTION
15)	

16 Pursuant to Rule 53 of the Federal Rules of Civil Procedure and the Court's
17 March 28, 2023 Amended Order Appointing Special Master (Dkt. 67), the Special
18 Master received claim construction briefing (Dkts. 61, 62, 69 & 70) and held a claim
19 construction hearing on April 17, 2023 (*see* Dkt. 78-1, Special Master Minutes). The
20 Special Master now enters this Report and Recommendation on Claim Construction.

Table of Contents

I. THE PATENTS-IN-SUIT	3
II. LEGAL STANDARDS.....	5
III. LEVEL OF ORDINARY SKILL IN THE ART.....	5
IV. PLAINTIFF’S MOTION TO STRIKE DEFENDANT’S CLAIM CONSTRUCTION EXPERT DECLARATIONS	6
V. DISPUTED TERMS IN U.S. PATENT NO. RE45,067	16
1. “ramp”	17
2. “the drop”	24
3. “a device for grasping and transferring the substrate from the input magazine to the movement device and from the movement device to the output magazine”	28
4. “a reservoir configured for including a viscous product having viscosity between 100 and 1000 centipoises”	39
5. “said computer device managing the operations on each of the work stations according to the position of the substrate, to the read station and to the drying station, and/or with the management of the information received at the different work stations to coordinate the operations”	48
6. “viscosity between 10 and 1000 centipoises”	54
7. “average viscosity”	56
VI. DISPUTED TERMS IN U.S. PATENTS NO. 8,506,031 AND 8,783,806	59
8. “nozzle arrangement”	59
9. “the ink container”	65
10. “temperature of the droplets as the ink flows from the ink container to the nozzle”	69
11. “the intermediate value having an amplitude and/or duration to dependent on the viscosity of the ink droplet” and “the intermediate value having an amplitude and/or duration dependent on the viscosity of the ink droplet”	74
12. “said shape”	78
13. “in response to at least one of the following parameters”	81
VII. DISPUTED TERMS IN U.S. PATENT NO. 9,422,449	87
14. “oligomer”	87
15. “adhesion function monomer”	94
VIII. CONCLUSION.....	98

I. THE PATENTS-IN-SUIT

Plaintiff MGI Digital Technology S.A. (“Plaintiff” or “MGI”) asserts four patents against Defendant Duplo U.S.A. Corporation (“Defendant” or “Duplo”). (Dkt. 53 at 2.) MGI submits: “For more than four decades, Plaintiff MGI Digital Technology S.A. (‘MGI’) actively researched and developed its own printing technology in-house, which allowed MGI to become a worldwide leader in the commercial printing business. The four patents asserted against Duplo . . . are a subset of the portfolio of patents MGI developed in this technology.” (Dkt. 53 at 1.)

The patents-in-suit are United States Patents No. 8,506,031 (“the ’031 Patent”), 8,783,806 (“the ’806 Patent”), RE45,067 (“the ’067 Patent”), and 9,422,449 (“the ’449 Patent”). (Dkt. 53 at 2.) The patents-in-suit include ten independent claims and 121 dependent claims. (*Id.*)

The ’031 Patent, titled “Ink Jet Printer and Method for Depositing a Protective Layer on a Substrate,” issued on August 13, 2013, and bears an earliest priority date of December 30, 2008. The Abstract of the ’031 Patent states:

A protective layer is applied to a substrate moving relative to an inkjet nozzle array. Each nozzle responds to a piezoelectric actuator. Shapes of ink droplets deposited by the nozzles on the substrate, to form the protective layer, are controlled by shapes of electric waveforms applied to the actuators. Shapes of the waveforms respond to at least one of: droplet viscosity and temperature, temperature of the substrate, desired thickness of the layer, type of substrate surface to which the droplets are applied, and relative speed of the substrate and the ink jet nozzle array.

1 The '806 Patent is a divisional of the '031 Patent.

2 The '067 Patent, titled "Numerical Jet Machine for the Application of a Coating
3 onto a Substrate," issued on August 12, 2014, and bears an earliest priority date of
4 June 14, 2005. The Abstract of the '067 Patent states:

5 The invention concerns a contactless numerical printing machine for
6 products of average fluidity, such as varnish, glue, and conducting or
7 scratchable ink, onto a substrate of variable thickness and dimensions. The
8 machine includes a special device for printing without contact by
9 projection. The projected materials are materials of average fluidity or
composed of large-dimension molecules. The process used includes an
electro-acoustic device for control of the projection, and a multiplicity of
projection nozzles, each controlled individually.

10 The machine also includes a production chain with different work stations,
11 whose printing devices are controlled by a computer management system.
The production chain allows printing with a certain precision in given zones
located during the processing by an appropriate work station.

12 The '449 Patent, titled "Varnish Composition Transferable by Inkjet Suitable for
13 Sublimable or Thermal-Transfer Ink," issued on August 23, 2016, and bears an earliest
14 priority date of April 24, 2012. The Abstract of the '449 Patent states:

15 The present invention relates to a varnish which is for covering the surface
16 of a substrate and deposited by inkjet, to a process for preparing said
17 varnish and to the use thereof as a laminable and/or overprintable ink or
varnish.

18 Pursuant to the January 12, 2023 Special Master Report and Recommendation on
19 Defendant's Motion to Reduce the Number of Asserted Claims (Dkt. 57-1), Plaintiff has
20 narrowed its number of asserted claims to a total of 32 claims across the four patents-in-
suit, namely the following (the ten asserted independent claims are italicized): Claims 1,

2, 4, 16, 18, 20, and 32 of the '067 Patent; Claims 1, 7, 12, and 18 of the '031 Patent; Claims 1, 2, 4, 8, 9, 10, 12, 18, 19, 20, 22, 27, 28, and 31 of the '806 Patent; and Claims 1, 2, 4, 7, 11, 26, and 28 of the '449 Patent.

II. LEGAL STANDARDS

The Court has set forth relevant legal principles in, for example, *Spigen Korea Co. Ltd. v. Lijun Liu, et al.*, No. 2:16-CV-09185-DOC-DFM, Dkt. 215, 2018 WL 8130608, slip op. at 10–11 (C.D. Cal. Dec. 12, 2018), and *Limestone Memory Systems, LLC v. Micron Technology, Inc.*, No. 8:15-CV-00278-DOC-KES, Dkt. 242, 2019 WL 6655273, slip op. at 2–8 (C.D. Cal. Sept. 11, 2019). For example, the Court noted that “[i]t is a bedrock principle of patent law that the claims of a patent define the invention to which the patentee is entitled the right to exclude.” *Spigen Korea*, No. 2:16-CV-09185-DOC-DFM, Dkt. 215, slip op. at 10 (quoting *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc)). The Court also noted that “the terms must be read in the context of the entire patent.” *Id.* (citing *Phillips*, 415 F.3d at 1314).

III. LEVEL OF ORDINARY SKILL IN THE ART

Plaintiff submits: “[T]he proper construction of the terms submitted is the same under either parties’ position as to level of ordinary skill, and no finding should be made on that issue at this time. Such a determination should be deferred until such time as it may be material to another issue, such as obviousness.” (Dkt. 60 at 11.) Defendant has not argued otherwise, so no dispute is apparent as to the precise level of ordinary skill in

1 the art. Therefore, at least for purposes of the present Report and Recommendation on
2 Claim Construction, the Special Master need not make any finding as to the level of
3 ordinary skill in the art.

4 **IV. PLAINTIFF’S MOTION TO STRIKE DEFENDANT’S** 5 **CLAIM CONSTRUCTION EXPERT DECLARATIONS**

6 Regarding Plaintiff’s motion to strike Defendant’s claim construction expert
7 declarations, as directed by the Special Master the parties presented written arguments in
8 their claim construction briefing, and the Special Master heard oral arguments on this
9 motion during the April 17, 2023 claim construction hearing.

10 Defendant served declarations by its two experts, Dr. Charles F. Reinholtz, Ph.D.,
11 and Dr. Chris E. Scott, Ph.D., as Exhibits 2 and 3 to the Joint Hearing Statement that the
12 parties filed on February 24, 2023. (Dkt. 60)

13 Plaintiff “objects to, and moves to exclude, any extrinsic evidence from expert
14 witnesses because Duplo failed to comply with the requirement to identify ‘testimony of
15 percipient and expert witnesses they contend support their respective claim
16 constructions’ and ‘provide a brief description of the substance of that witness’s
17 proposed testimony’ that was due on February 10[, 2023].” (Dkt. 61 at 4–5 (quoting
18 Dkt. 46, Oct. 28, 2022 Joint Case Schedule as Agreed Before Special Master David
19 Keyzer Filed in Response to Court’s Order of October 25, 2022, at 10–11).)

20 Defendant argues that the February 10, 2023 exchange of extrinsic evidence for
claim construction required Defendant to provide a brief description of the substance of

1 the expert testimony but did *not* require Defendant to identify any expert by name.
2 (Dkt. 62 at 22.) Rather, Defendant asserts, identification of an expert by name was
3 required in the February 24, 2023 Joint Hearing Statement (Dkt. 60), at which time
4 Defendant served expert declarations. (Dkt. 62 at 22.) Defendant further submits that
5 Defendant made its claim construction experts available for deposition during the claim
6 construction discovery period and Plaintiff indeed deposed Defendant’s claim
7 construction experts on March 6 and 7, 2023. (*Id.* at 23.)

8 Plaintiff responds that “Duplo cites no legal authority for its argument that it did
9 not even have to *name* its witnesses in [the February 10, 2023] disclosure.” (Dkt. 70
10 at 1.) Plaintiff also argues that “Duplo did *not* disclose the substance of any purported
11 witnesses’ testimony on February 10, but instead merely provided a boilerplate listing of
12 sixty-nine terms with fifty-seven reciting the legal standard for indefiniteness, eight
13 reciting the legal standard for means-plus-function elements, and four referencing
14 general principles about viscosity.” (*Id.* at 2 (citations omitted).)

15 Defendant responds that “Defendant followed the Scheduling Order, and provided
16 the declarations at the time of the Joint Claim Construction Chart, three weeks before
17 opening briefs.” (Dkt. 69 at 24.) Defendant also argues that Plaintiff had ample
18 opportunity to depose Defendant’s experts and to serve any rebuttal evidence prior to the
19 start of claim construction briefing. (*Id.*)

1 The agreed-upon Joint Case Schedule (Dkt. 46) required the following no later
2 than February 10, 2023 (“Exchange of Preliminary Claim Construction and Extrinsic
3 Evidence”):

4 a. MGI and Duplo USA will simultaneously exchange a preliminary
5 proposed construction of each claim, term, phrase, or clause which the
6 parties have identified for claim construction purposes. Each such claim
7 construction will also, for each element which any party contends is
8 governed by 35 U.S.C. § 112(6), identify the structure(s), act(s), or
9 material(s) described in the specification corresponding to that element.

10 b. Simultaneously with the exchange of the Preliminary Claim
11 Constructions, the parties must also provide a *preliminary identification of*
12 *extrinsic evidence, including without limitation*, dictionary definitions,
13 citations to learned treatises and prior art, and *testimony of percipient and*
14 *expert witnesses* they contend support their respective claim constructions.
15 The parties must identify each such item of extrinsic evidence by
16 production number or produce a copy of any such item not previously
17 produced. *With respect to any such witness, percipient or expert, the*
18 *parties must also provide a brief description of the substance of that*
19 *witness’s proposed testimony.*

20 (Dkt. 46 at 10–11 (emphasis added).) Also, this agreed-upon schedule required, no later
than February 24, 2023, a “Joint Hearing Statement” including, of potential relevance
here, “[w]hether any party proposes to call one or more witnesses, including experts at
the Claim Construction Hearing, the identity of each such witness, and for each expert, a
summary of each opinion to be offered in sufficient detail to permit a meaningful
deposition of that expert.” (*Id.* at 14.)

The following are examples from Defendant’s Preliminary Claim Construction
and Extrinsic Evidence served on February 10, 2023:

'031 Pat. Term	Claim(s)	Construction	Evidence
...			
"the ink container"	1	Indefinite (<i>see, e.g.,</i> Defendant's Invalidity Contentions (Jan. 25, 2023)).	Duplo USA may rely on expert testimony explaining that "the ink container" does not have a reasonably certain meaning to a person of ordinary skill in the art.

* * *

'067 Pat. Term	Claim(s)	Construction	Evidence
...			
"viscosity between 10 and 1000 centipoises"	32	Indefinite (<i>see, e.g.,</i> Defendant's Invalidity Contentions (Jan. 25, 2023)).	- U.S. Patent No. 7,771,032 - U.S. Patent No. 9,422,449 - U.S. Patent No. 5,644,343 - U.S. Patent Application Pub. No. 2004/0176566 - Leach et al., <i>The Printing Ink Manual</i> (5th edition), 1999, Chapter 14. - Duplo USA may rely on expert testimony explaining, for example, that a person of ordinary skill in the art would not understand with reasonable certainty "a viscous product having viscosity between ...," including because there are multiple ways to measure viscosity, because there are not sufficient conditions described for the viscosity values.

(Dkt. 61, Ex. 10 at 7 & 38.)

Plaintiff cites, for example, *Phoenix Licensing* applying Local Patent Rule 4-2 of the Eastern District of Texas, which at the relevant time contained language similar to the language here at issue: "PR 4-2 requires, in relevant part, that the parties ' . . . provide a preliminary identification of extrinsic evidence, including without limitation . . . testimony of percipient and expert witnesses they contend support their respective claim constructions With respect to any such witness, percipient or expert, the parties shall also provide a brief description of the substance of that witness' proposed

1 testimony.” *Phoenix Licensing, L.L.C. v. AAA Life Ins. Co.*, No. 2:13-CV-1081-JRG-
2 RSP, 2015 WL 11110605, at *1 (E.D. Tex. Apr. 7, 2015).

3 In *Phoenix Licensing*, the court struck expert testimony because: “[I]t is clear that
4 the defendants failed to provide sufficient notice to meet the requirements under this
5 rule. Put simply, the defendants did not even identify the *name* of the expert, much less
6 provide ‘a brief description of the substance of that witness’ proposed testimony’ as
7 required under the local patent rules.” *Id.* The *Advanced Marketing* case cited by
8 Plaintiff is similar in this regard, the party there having not timely identified the expert.
9 See *Advanced Mktg. Sys., LLC v. CVS Pharmacy, Inc.*, No. 6:15-CV-134-JRG-KNM,
10 2016 WL 1741396, at *6 (E.D. Tex. May 3, 2016) (“AMS failed to *identify* Dr.
11 Cromarty and the patents on which he relied in its P.R. 4-2 disclosures and also failed to
12 ‘provide a brief description of the substance of [Dr. Cromarty’s] proposed testimony.’”) (emphasis added).

14 Here, as in *Phoenix Licensing* and *Advanced Marketing* (and with the disclosure
15 requirement in this case being similar to the local rule that was applicable in *Phoenix*
16 *Licensing* and *Advanced Marketing*, as noted above), Defendant did not identify the
17 name of its experts until after the above-discussed deadline for disclosing extrinsic
18 evidence. (Dkt. 46 at 10–11.) Indeed, Plaintiff submits evidence that Defendant did not
19 even approach one of the experts, Dr. Reinholtz, until “[a]bout the 15th or 17th of
20 February, somewhere in there,” which was several days after the February 10 deadline

1 for disclosing extrinsic evidence. (Dkt. 61, Ex. 13, Mar. 7, 2023 Reinholtz dep. at 6:13–
2 16.) Defendant notes that it provided expert declarations much earlier than did the
3 defendants in *Phoenix Licensing*, where the defendants provided the plaintiff with an
4 expert declaration in the defendants’ responsive claim construction brief (after plaintiff
5 had filed its opening claim construction brief). (Dkt. 69, Ex. 19, No. 2:13-CV-1081-
6 JRG-RSP, Dkt. 418, Mot. to Strike at 2 (E.D. Tex. Mar. 23, 2015).) Likewise,
7 Defendant points out that in *Advanced Marketing* the plaintiff provided the challenged
8 expert declaration for the first time with its opening claim construction brief. See 2016
9 WL 1741396, at *5.

10 Defendant’s attempts to distinguish *Phoenix Licensing* and *Advanced Marketing*
11 are unavailing because the issue here is not whether Plaintiff had an opportunity to
12 address Defendants’ expert’s declarations in Plaintiff’s claim construction briefing.
13 Rather, the issue is whether Defendant timely disclosed its experts in accordance with
14 the agreed-upon schedule so that Plaintiff would have the agreed-upon opportunity to
15 marshal evidence to oppose the opinions of Defendant’s experts, including but not
16 limited to an opportunity for Plaintiff to locate and retain its own expert. Defendant’s
17 late disclosure of its experts deprived Plaintiff of that opportunity.

18 At the April 17, 2023 hearing, Defendant noted that subsequent to *Phoenix*
19 *Licensing* and *Advanced Marketing*, the Eastern District of Texas amended its local rules
20 so as to explicitly require disclosure of the “identity” of experts. Defendant argued that

1 this demonstrates that the prior language (which was essentially the same as the language
2 at issue in the present case) did *not* require disclosure of identity. Commentary to the
3 local rules amendment, however, explained that the amendment “addresse[d] a perceived
4 lack of clarity among some practitioners as to the disclosure requirements and
5 procedures for witnesses, particularly expert witnesses, during the claim construction
6 process.” General Order No. 18-10 (E.D. Tex. Oct. 25, 2018). A fair reading of the
7 phrase “a perceived lack of clarity among some practitioners” is that the amendment
8 merely made explicit what was already implicit and understood by the court and most
9 practitioners, at least as to the requirement of disclosing the identities of the experts.

10 The *Pulse* case cited by Defendants is likewise unpersuasive. *Pulse Eng’g, Inc. v.*
11 *Mascon, Inc.*, No. 08cv0595 JM (AJB), 2009 WL 250058, at *4 (S.D. Cal. Feb. 3, 2009).
12 There, the court denied a motion to strike expert opinions where the defendant had
13 “disclosed simply that its expert ‘may testify concerning the meaning of the term to one
14 of skill in the art in the context of the [asserted patent].” *Id.* at *1 & *2. The court denied
15 the motion to strike because “Pulse was provided with a detailed description of the
16 proposed testimony [at the time of joint claim construction materials,] well in advance of
17 the claim construction briefing process. Thus, the court determines Pulse was not
18 prejudiced” *Id.*, at *4. *Pulse* is distinguishable because in that case the defendant
19 timely disclosed the identity of the expert. *See id.*, at *2. Defendant identifies no case in
20 which the local rules of the Southern District of California (from which the parties

1 derived their relevant agreed-upon case schedule language) have been interpreted so as
2 *not* to require disclosure of the identities of experts as part of the disclosure of
3 preliminary claim constructions and extrinsic evidence.

4 Finally, having heard oral arguments and having again examined the agreed-upon
5 schedule, the Special Master is even more thoroughly convinced that the agreed-upon
6 requirement, on its face, of “a preliminary *identification* of extrinsic evidence, including
7 without limitation, dictionary definitions, citations to learned treatises and prior art, and
8 testimony of percipient and expert witnesses they [(the parties)] contend support their
9 respective claim constructions,” required *identification* of any expert witnesses. (Dkt. 46
10 at 10–11 (emphasis added).) The subsequent sentence, requiring “[w]ith respect to any
11 such witness, percipient or expert, the parties must *also* provide a brief description of the
12 *substance* of that witness’s proposed testimony,” was a distinct requirement *in addition*
13 to the “identification” required in the earlier sentence. (*Id.* (emphasis added).)

14 Based on that plain reading of the agreed-upon language, and also based on
15 consideration of the above-discussed authorities, Defendant’s identification of
16 Dr. Reinholtz and Dr. Scott on February 24, 2023 (by way of the declarations of those
17 experts served at the time of the Joint Hearing Statement, two weeks after the required
18 February 10, 2023 disclosures) was untimely.

19 The remaining issue is whether this untimeliness warrants striking the opinions of
20 these experts in support of Defendant’s claim construction arguments. The above-

1 discussed *Phoenix Licensing* and *Advanced Marketing* cases suggest that these untimely
2 expert opinions and testimony can be stricken as a matter of course. Other authorities
3 are in accord with this general principle, even if different local rules were there at issue.
4 See *SAWT Inc. v. Joe Moore Constr. Inc.*, No. LA CV 14-03653-JAK-AGRx, 2015 WL
5 12746709, at *5 (C.D. Cal. Mar. 16, 2015); see also *Fairfield Indus., Inc. v. Wireless*
6 *Seismic, Inc.*, No. 4:14-CV-2972, 2015 WL 1034275, at *2 (S.D. Tex. Mar. 10, 2015).
7 Out of an abundance of caution, however, the Special Master now also considers the
8 *Munchkin* factors regarding whether untimely evidence should be stricken.

9 The *Munchkin* factors consider the surprise to the party against whom the
10 evidence would be offered, the ability of that party to cure the surprise, the extent to
11 which allowing the evidence would disrupt the trial, the importance of the evidence, and
12 the explanation of the non-disclosing party. *Munchkin, Inc. v. Luv N' Care, Ltd.*, No.
13 2:13-CV-07228-ODW-AGR, 2015 WL 774065, at *2 (C.D. Cal. Feb. 24, 2015) (Wright,
14 J.). Other authorities set forth a similar listing of five factors. See *S. States Rack &*
15 *Fixture, Inc. v. Sherwin-Williams Co.*, 318 F.3d 592, 596 (4th Cir. 2003); see also *Dey,*
16 *L.P. v. Ivax Pharms., Inc.*, 233 F.R.D. 567, 571 (2005) (citing *Southern States*). At the
17 April 17, 2023 hearing, Defendant argued that striking the experts would be a
18 disproportionate remedy for Defendant's misunderstanding of what has apparently
19 turned out to be vague language, and Defendant argued there was no unfair prejudice
20

1 because Plaintiff had ample time to retain its own claim construction experts if Plaintiff
2 had so desired.

3 Here, Defendant's late disclosure of expert witnesses surprised Plaintiff because
4 the identities of Defendant's expert witnesses should have been disclosed earlier, as
5 discussed above. Plaintiff timely objected in the February 24, 2023 Joint Hearing
6 Statement (Dkt. 60 at 8) (and earlier, in informal communications with Defendant), well
7 before the start of claim construction briefing, and the Special Master instructed the
8 parties to address this dispute in their claim construction briefing. Allowing this
9 evidence would potentially require granting Plaintiff leave to serve expert declarations.
10 If so, Defendant would need an opportunity to depose such new experts. This would all
11 disrupt the claim construction proceedings and potentially require a new claim
12 construction hearing with a delay of several months, which in turn would disrupt the
13 remainder of the pre-trial schedule and likely the trial setting as well. Such a disruption
14 has not been shown to be warranted.

15 Further, in light of all of the other evidence bearing upon the claim construction
16 disputes discussed herein, the expert opinions here at issue are of minor importance.
17 Indeed, the Federal Circuit has noted that expert opinions are generally of less
18 importance than the specification and the prosecution history. *See Phillips*, 415 F.3d
19 at 1318.

1 Finally, as to Defendant's explanation, Defendant's contention that disclosing the
2 expert opinions did not require disclosing the *identities* of the experts is simply
3 untenable, as discussed above. *See Phoenix Licensing*, 2015 WL 11110605, at *1; *see*
4 *also Advanced Mktg.*, 2016 WL 1741396, at *6. Defendant's attempts to distinguish
5 *Phoenix Licensing* and *Advanced Marketing* as non-binding, out-of-district decisions is
6 unavailing because the principle is fundamental; the disclosure requirement agreed upon
7 in this case, with relevant language similar to the applicable local rule that was applied in
8 *Phoenix Licensing* and *Advanced Marketing*, required at its most basic level a disclosure
9 of the identities of the experts. The Special Master therefore need not delve into the
10 deeper dispute about the amount of detail that Defendant provided in its February 10,
11 2023 disclosures. On balance, the *Munchkin* factors demonstrate that exclusion of
12 Defendant's expert opinions on claim construction is appropriate, and exclusion is a
13 permissible sanction for untimely disclosure. *See, e.g., Phigenix, Inc. v. Genentech, Inc.*,
14 No. 2017-2617, 2018-1042, 783 F. App'x 1014, 1020 (Fed. Cir. Sept. 5, 2019).

15 The Special Master therefore hereby **STRIKES** the February 24, 2023 expert
16 declarations of Defendant's claim construction experts, Dr. Reinholtz and Dr. Scott.

17 **V. DISPUTED TERMS IN U.S. PATENT NO. RE45,067**

18 On April 14, 2023, the Special Master provided the parties with a Tentative
19 Special Master Report and Recommendation on Claim Construction ("Tentative R&R")
20 with the aim of focusing the parties' arguments and facilitating discussion. Although the

Tentative R&R is not part of the record, the Special Master herein sets forth the tentative constructions as part of discussion for each disputed term.

1. “ramp”

“ramp” (’067 Patent, Claims 1, 16, 32)	
Plaintiff MGI’s Proposal	Defendant Duplo’s Proposal
The term “ramp” has its plain and ordinary meaning requiring no construction, wherein the phrase “nozzles arranged in a ramp” means nozzles arranged in a line next to each other, and not restricted to any particular orientation, and is neither indefinite under 35 U.S.C. § 112(2) nor a means-plus-function claim under 35 U.S.C. § 112(6).	Plain and ordinary meaning, no construction required.

(Dkt. 60, Ex. 1 at 20; Dkt. 62 at 1.)

In the Tentative R&R, the Special Master tentatively construed this term as follows: “nozzles arranged in a line or pattern.”

(a) The Parties’ Positions

Plaintiff argues that “[t]he parties agree that the term ‘ramp’ used in the phrase ‘a series of plural nozzles arranged in a ramp,’ should be given its plain and ordinary meaning,” and “the plain and ordinary meaning of the phrase ‘nozzles arranged in a ramp’ is ‘nozzles arranged in a line next to each other, and not restricted to any particular

1 orientation.” (Dkt. 61 at 12.) Plaintiff also submits that “[d]ependent claims 3, 4, 19,
2 and 20 concern the coordinated movement of the nozzles on the ramp with respect to the
3 substrate, consistent with the nozzles being arranged in a line next to each other,” and
4 “[a]ll other portions of the specification confirm that the ramp is how the nozzles are
5 ‘arranged’ for concerted movement, supporting the understanding that they are in a line
6 without regard to any particular orientation.” (*Id.* (citations omitted).) Further, Plaintiff
7 argues that “[p]rosecution history citations to prior art as corresponding to nozzles
8 arranged in a ramp also support this understanding.” (*Id.* (citations omitted).)

9 Defendant responds that “[r]amp’ is a simple, everyday term and does not require
10 construction.” (Dkt. 62 at 1.) Defendant also argues that “the plain language of
11 claims 1, 16, and 32 indicate that the ‘ramp’ is a structure in which nozzles are
12 arranged,” and “Claim 3 (and the specification) confirms that the ‘ramp’ is a structure,
13 rather than merely a line of nozzles, as the ‘ramp’ is described to be ‘equipped’ with
14 another component” (*Id.* at 2.)

15 Plaintiff responds that “the ramp is the arrangement of the nozzles themselves, not
16 some undefined mystery structure as Duplo contends.” (Dkt. 70 at 3.) Plaintiff also
17 argues that “[e]ach independent claim recites the ‘nozzles arranged in a ramp,’ where ‘in
18 a ramp’ describes the configuration and arrangement of the ‘nozzles,’” “[t]he dependent
19 claims are consistent with this reciting ‘the ramp in [or on] which the nozzles are
20 arranged,’ denoting again the arrangement and configuration of nozzles,” and “[t]he

1 specification and drawings further confirm that ‘ramp’ is the way nozzles are aligned and
2 arranged, not a separate structure.” (*Id.* at 3–4.)

3 Defendant responds that “MGI’s own arguments support that the alleged invention
4 contemplates a ramp as a physical structure.” (Dkt. 69 at 1.) Defendant further argues
5 that “this is how the specification describes ‘ramp,’” and “MGI’s attempt to read out
6 ‘ramp’ is also improper because, as discussed in the Opening, the claimed ‘ramp’ was
7 relied on to distinguish the prior art during prosecution.” (*Id.* (citation omitted).)

8 At the April 17, 2023 hearing, the parties presented oral arguments. For example,
9 Plaintiff argued that a heater need not be included in each nozzle but rather could be part
10 of an arrangement, and Plaintiff argued that the structure that holds the nozzles is not
11 claimed and could be a single structure or could be multiple structures.

12 (b) Analysis

13 Claims 1, 3, and 4 of the ’067 Patent, for example, recite (emphasis added):

14 1. A numerical jet machine for viscous product for the application of a
coating to a plastic face of a substrate, including:

15 a reservoir configured for including a viscous product having
viscosity between 100 and 1000 centipoises,

16 an input magazine and an output magazine,
work stations and a computer device to manage the operations on
17 each of the work stations,

18 a movement device for moving the substrate between the different
work stations,

19 a device for grasping and transferring the substrate from the input
magazine to the movement device and from the movement device to the
output magazine,

20 said work stations comprising at least:

1 a read station for reading and determining at least one position
2 of the substrate and/or of markers placed on the substrate,
3 an application station including a series of plural nozzles
4 arranged in a *ramp*, each of the nozzles including a hollow
5 needle, a piezoelectric actuator affixed to a resonator
6 formed by an assembly included in each hollow needle,
7 a drying station;

8 wherein each hollow needle is piloted separately by the
9 computer device, and is arranged to be fed from said
10 reservoir configured for including said viscous product to
11 be applied onto the substrate during relative movement
12 between the substrate and the application station, to apply
13 the product in a given zone on the substrate,

14 wherein each hollow needle is arranged to be vibrated by its
15 associated piezoelectric actuator, with the excitation of the
16 actuator, in duration and power, determining the dimensions
17 and the shape of the drop of viscous product, to apply the
18 product in a given application zone on the substrate, said
19 application zone being defined for each substrate by a
20 configuration file concerning the zone shape, the zone
position on the substrate in relation to the position
determined by the read station, the quantity of product to be
applied,

wherein the computer device is arranged to be responsive to said
configuration file to translate the information into parameters of relative
movement of the substrate, and of the nozzles, and selective control of each
actuator of each nozzle.

* * *

3. A machine according to claim 1, wherein the *ramp* in which the nozzles
are arranged is equipped with a movement resource in relation to the
medium the substrate defining said relative movement between the substrate
and the application station.

4. A machine according to one of claim 1, wherein the said application site
zone on the substrate is specified by the relative movement of the substrate
in relation to the *ramp* on which the nozzles are arranged.

1 In interpreting these claims, the specification provides context by disclosing that
2 “[t]he nozzles are aligned and assembled *on a ramp*, thus *forming a ramp* of nozzles
3 (12).” ’067 Patent at 4:21–22 (emphasis added); *see id.* at 2:49–55; *see also id.* at Fig. 2.
4 A fair reading of “aligned and assembled,” in the context of “forming a ramp,” is that the
5 alignment and relative position is what “form[s] a ramp.” Dependent Claims 3 and 4 are
6 not inconsistent with the term “ramp” referring not to a physical structure but rather to
7 how the nozzles are positioned in relation to one another. Even though dependent
8 Claims 3 and 4 refer to the “ramp” being “*equipped* with a movement resource” and
9 refer to “relative movement of the substrate in relation to the ramp *on which* the nozzles
10 are arranged,” these claims can be readily understood as referring to how “the nozzles
11 are arranged” so as to form a “ramp” of nozzles.

12 During prosecution, the examiner stated that the “Schlatterbeck” reference (United
13 States Patent Application Publication No. 2005/0255249) “discloses the *ramp* (see
14 page 10 [0108], ‘metering heads 250’) in which the nozzles (‘nozzles 260’) are arranged
15 is equipped with a movement resource (3) (see page 7 [0077], ‘device for moving’) in
16 relation to the medium (‘base 2’).” (Dkt. 61, Ex. 7, May 1, 2007 Office Action at 8
17 (MGI_000167) (p. 132 of 217 of Ex. 7) (emphasis added); *see id.*, Ex. 8, Nov. 14, 2011
18 Office Action at 16 (MGI_000727) (citing Schlatterbeck at ¶¶ 109–114).) The cited
19 portion of Schlatterbeck discloses:

20 A coating unit 200 comprises a plurality of metering heads 250. A metering
head 250 comprises at least two nozzles 260. The nozzles 260 are in a

1 linear arrangement. To achieve the desired resolution of nozzles per unit
2 length along the direction 320, the metering heads 250 may be in various
3 arrangements, for example in a linear arrangement, a staggered
4 arrangement, a herringbone pattern or combinations thereof.

5 U.S. Patent Application Publication No. 2005/0255249 at ¶ 108; *see id.* at ¶¶ 109–114;
6 *see also id.* at Fig. 10C.

7 The examiner’s statements, read in light of the disclosures in the Schlatterbeck
8 reference, are readily understood as using the term “ramp” as referring not to a distinct
9 physical structure but rather to how the nozzles are positioned in relation to one another.
10 Also, whereas the examiner cited art that showed a single physical structure holding the
11 nozzles, the examiner’s belief that this was *sufficient* to teach a “ramp” does *not* amount
12 to evidence that the term “ramp” is *limited* to a single physical structure.

13 The patentee evidently had the same understanding during prosecution, discussing
14 positioning of physical components “in a ramp” without using any reference numeral to
15 refer to the “ramp”:

16 [T]he valve 17 [of Schlatterbeck] is not designed to be installed in a ramp of
17 hollow needles. Even though the dimensions of the valve 17 are not
18 specified, a fuel injection valve seems to be large [sic, too large] to be
19 installed with other valves in a ramp, because nozzle 16 cannot be
20 dissociated from the valve 17 which comprises the actuator 171 of the
need[le] 19.

(Dkt. 62, Ex. 2, Aug. 31, 2007 Amendment at 8 (MGI_000217).)

21 Likewise, as noted above, the specification of the ’067 Patent discloses that “[t]he
22 nozzles are aligned and assembled on a ramp, thus forming a ramp of nozzles (12),” and

1 this disclosure does not use any reference numeral to refer to the “ramp” and there is no
2 physical “ramp” structure illustrated in, for example, Figure 2. See ’067 Patent at 4:21–
3 22 & Fig. 2.

4 Finally, at the April 17, 2023 hearing, Defendant expressed concern regarding the
5 Special Master’s tentative construction referring to a “pattern,” which is a term that
6 appears in Schlatterbeck but not in the ’067 Patent. Having considered the oral
7 arguments, the Special Master finds that “pattern” could potentially be overbroad and
8 that referring to a “line” is sufficient, particularly in light of the disclosure that “[t]he
9 nozzles are *aligned* and assembled on a ramp.” *Id.* (emphasis added). Construing
10 “ramp” to mean “a line of nozzles” perhaps may seem redundant with surrounding claim
11 language that already refers to nozzles, but such redundancy is permissible because it
12 will assist the finder of fact in understanding that the term “ramp” refers not to a distinct
13 physical structure but rather to the spatial relationship of the nozzles with regard to one
14 another. See *01 Communique Laboratory, Inc. v LogMeIn, Inc.*, 687 F.3d 1292, 1296
15 (Fed. Cir. 2012) (“01 Communique has not cited, and we have not discovered, any
16 authority for the proposition that construction of a particular claim term may not
17 incorporate claim language circumscribing the meaning of the term.”)

18 The Special Master therefore hereby construes **“ramp”** to mean **“a line of**
19 **nozzles.”**
20

2. “the drop”

“the drop” (’067 Patent, Claim 1)	
Plaintiff MGI’s Proposal	Defendant Duplo’s Proposal
This term has its plain and ordinary meaning requiring no construction and is neither indefinite under 35 U.S.C. § 112(2) nor a means-plus-function claim under 35 U.S.C. § 112(6).	Indefinite

(Dkt. 60, Ex. 1 at 21; Dkt. 62 at 2.)

Claim 1 of the ’067 Patent recites “the drop” without any prior recitation of a “drop” (emphasis added):

1. A numerical jet machine for viscous product for the application of a coating to a plastic face of a substrate, including:
a reservoir configured for including *a viscous product having viscosity between 100 and 1000 centipoises*,
...
work stations and a computer device to manage the operations on each of the work stations,
...
said work stations comprising at least:
...
an application station including a series of plural nozzles arranged in a ramp, each of the nozzles including a hollow needle, a piezoelectric actuator affixed to a resonator formed by an assembly included in each hollow needle,
...
wherein each hollow needle is piloted separately by the computer device, and is arranged to be fed from said reservoir configured for including said *viscous product to*

1 *be applied onto the substrate* during relative movement
2 between the substrate and the application station, to *apply*
3 *the product in a given zone on the substrate*,
4 wherein each hollow needle is arranged to be vibrated by its
5 associated piezoelectric actuator, with the excitation of the
6 actuator, in duration and power, determining the dimensions
7 and the shape of *the drop of viscous product*, to apply the
8 product in a given application zone on the substrate, said
9 application zone being defined for each substrate by a
10 configuration file concerning the zone shape, the zone
11 position on the substrate in relation to the position
12 determined by the read station, the quantity of product to be
13 applied, ...

14 Plaintiff argued that this term is not indefinite because “‘the drop’ plainly refers to
15 a drop of the viscous product such as ink or varnish to apply to the media,” and “[t]he
16 claims make clear that ‘the drop’ is ‘of viscous product’ from the ‘hollow needle’ when
17 ‘vibrated by its associated piezo electric actuator,’ having been ‘fed from said reservoir
18 configured for including said viscous product’ in order ‘to apply the product in a given
19 application zone.’” (Dkt. 61 at 12–13 (citing ’067 Patent at 5:61–6:5).)

20 Defendant argued that this term lacks antecedent basis, and “[v]iscous product’
appears multiple times earlier in the claim, and it is ambiguous as to what viscous
product ‘the drop’ is in reference to.” (Dkt. 62 at 3.)

Plaintiff responded that “[t]he recital of ‘the drop of viscous product’ . . .
unambiguously refers to the same viscous product previously recited, which was
properly introduced by an indefinite article the first time it was first recited.” (Dkt. 70
at 5.)

1 Defendant responded by alternatively proposing that the antecedent for “the drop
2 of viscous product” is “a viscous product having viscosity between 100 and 1000
3 centipoises.” (Dkt. 69 at 2.)

4 In the Tentative R&R, the Special Master tentatively construed this term as
5 follows: “the antecedent basis for ‘the drop of viscous product’ is ‘a viscous product
6 having viscosity between 100 and 1000 centipoises.’”

7 At the April 17, 2023 hearing, the parties reached agreement that this term should
8 be construed to have its plain meaning so long as the Special Master also sets forth an
9 explicit finding regarding the antecedent basis for this term.

10 On the face of the claim, the “viscous product” is the same throughout the claim.
11 Thus, in the phrase “the drop of viscous product,” the antecedent basis for the “viscous
12 product” is reasonably clear. Moreover, generating “drops” of viscous product is
13 inherent in the recital of the claimed “jet machine” having hollow needles and
14 piezoelectric actuators for applying the viscous product to a substrate. Because “drops”
15 of viscous product are thus implicit in the claimed invention, the lack of explicit
16 antecedent basis for “the drop” does not give rise to any indefiniteness. *See Energizer*
17 *Holdings Inc. v. Int’l Trade Comm’n*, 435 F.3d 1366, 1371 (Fed. Cir. 2006) (holding that
18 “an anode gel comprised of zinc as the active anode component” provided implicit
19 antecedent basis for “said zinc anode”); *see also Ex Parte Porter*, 25 U.S.P.Q. 2d (BNA)
20 1144, 1145 (B.P.A.I. 1992) (“The term ‘the controlled fluid’ . . . finds reasonable

1 antecedent basis in the previously recited ‘controlled stream of fluid’”); *Fisher-*
2 *Price, Inc. v. Graco Children’s Prods.*, No. 05–1258, 154 F. App’x 903, 909 (Fed. Cir.
3 Nov. 4, 2005) (“[a] claim is not invalid for indefiniteness if its antecedent basis is present
4 by implication”) (citations omitted).

5 The Brief Summary of the Invention section of the specification confirms this
6 understanding:

7 The existing systems use different techniques to project a bubble of ink onto
8 the medium. According to a first technique, the ink contained in a nozzle is
9 expelled by a pressure created by a gaseous bubble formed at a heating
10 resistance which creates a chemical reaction by converting the ink to the
11 gaseous state. Another technique to create pressure is to use a piezo-electric
12 component which curves inward under the effect of an electric voltage, so
13 as to reduce the volume of the ink reservoir. *A droplet of ink is thus
14 expelled from the nozzle.*

15 ’067 Patent at 1:37–45 (emphasis added).

16 The Special Master accordingly hereby finds that **the antecedent basis for “the**
17 **drop of viscous product” is “a viscous product having viscosity between 100 and**
18 **1000 centipoises,”** and with that understanding the Special Master hereby construes
19 **“the drop”** to have its **plain meaning.**
20

3. “a device for grasping and transferring the substrate from the input magazine to the movement device and from the movement device to the output magazine”

“a device for grasping and transferring the substrate from the input magazine to the movement device and from the movement device to the output magazine”

(’067 Patent, Claims 1, 16, 32)

Plaintiff MGI’s Proposal

This term has its plain and ordinary meaning requiring no construction and is neither indefinite under 35 U.S.C. § 112(2) nor a means-plus-function claim under 35 U.S.C. § 112(6).

Defendant Duplo’s Proposal

Subject to 35 U.S.C. § 112, ¶ 6

Function:

“grasping and transferring the substrate from the input magazine to the movement device and from the movement device to the output magazine”

Structure:

Insufficient corresponding structure

This term is indefinite.

(Dkt. 60, Ex. 1 at 24–25; Dkt. 62 at 3.)

In the Tentative R&R, the Special Master tentatively construed this term as follows: “plain meaning.”

(a) The Parties’ Positions

Plaintiff argues that “[t]he intrinsic record clearly indicates that the patentee did not intend to invoke § 112, ¶ 6, with this claim element, and that a person of ordinary skill in the art would reasonably understand the entire phrase . . . to denote structures

1 well-known in the art for moving a substrate (such as paper) through a printer.” (Dkt. 61
2 at 13.) Plaintiff also submits that this phrase is a translation from a French priority
3 document, in which the language could not have been intended to invoke means-plus-
4 function treatment because no such provision exists in European patent law. (*Id.* at 13–
5 14.)

6 Defendant argues that “the term fails to recite sufficiently definite structure and
7 also recites function without reciting sufficient structure.” (Dkt. 62 at 4.) Defendant
8 argues that “[d]evice’ is a nonce word, having no connotation in the art to either a
9 structure or class of structures,” and “[t]he words surrounding the patent’s references to
10 ‘device,’ both in the claims and specification, merely describe functions that do not add
11 any structural connotations.” (*Id.* (citations omitted).) Defendant further argues that the
12 specification fails to disclose any corresponding structure because “the ’067 patent
13 merely provides a generic, non-structural disclosure in Fig. 1 . . . , where the ‘device’ is
14 depicted as the black box element 4.” (*Id.* at 5.)

15 Plaintiff responds that “Dr. Reinholtz’s [(Defendant’s expert’s)] testimony, even if
16 admissible, is deserving of no weight given that he offers nothing more than conclusory
17 opinions unsupported by evidence.” (Dkt. 70 at 6 (citations omitted).) Plaintiff argues
18 that “[t]here is no doubt that those skilled in the field of printing understand what a
19 device for grasping and transferring a substrate from an input tray into a printer would
20 be.” (*Id.* at 6–7.)

1 Defendant responds that “the drafter’s intent is not the correct inquiry, and MGI’s
2 speculative attempts to reconstruct the applicant’s intent by sifting through French and
3 European patent documents is inapposite.” (Dkt. 69 at 3.) Moreover, Defendant argues
4 that “[t]he underlying French language confirms that the ‘device’ limitation has always
5 been a generic, nonce word and that there is no relevant structure in the French
6 documents.” (*Id.*) Defendant argues that this limitation is written in traditional means-
7 plus-function format and includes no modifiers that impart any structure. (*Id.* at 4–5.)
8 Further, Defendant argues, “reciting the relative location of a nonce term or its
9 interaction with other components is insufficient,” (*id.* at 6 (citations omitted)), and
10 Defendant argues that Plaintiff is “attempting to claim in functional terms unbounded by
11 any reference to structure in the specification.” *Med. Instrumentation & Diagnostics*
12 *Corp. v. Elekta AB*, 344 F.3d 1205, 1211 (Fed. Cir. 2003). Finally, Defendant cites
13 *Aspex Eyewear, Inc. v. Altair Eyewear, Inc.*, 288 F. App’x 697, 704 (Fed. Cir. 2008), in
14 which the inventor “testified only that there were multiple types of retaining mechanisms
15 that could retain lenses[, and t]hus there is no indication in the record that ‘retaining
16 mechanism’ connotes definite structure.”

17 At the April 17, 2023 hearing, the parties presented oral arguments.

18 (b) Analysis

19 Title 35 U.S.C. § 112, ¶ 6, provides: “An element in a claim for a combination
20 may be expressed as a means or step for performing a specified function without the

1 recital of structure, material, or acts in support thereof, and such claim shall be construed
2 to cover the corresponding structure, material, or acts described in the specification and
3 equivalents thereof.”

4 “[T]he failure to use the word ‘means’ . . . creates a rebuttable presumption . . .
5 that § 112, para. 6 does not apply.” *Williamson v. Citrix Online LLC*, 792 F.3d 1339,
6 1348 (Fed. Cir. 2015) (en banc) (citations and internal quotation marks omitted). “When
7 a claim term lacks the word ‘means,’ the presumption can be overcome and § 112,
8 para. 6 will apply if the challenger demonstrates that the claim term fails to recite
9 sufficiently definite structure or else recites function without reciting sufficient structure
10 for performing that function.” *Id.* at 1349 (citations and internal quotation marks
11 omitted).

12 *Williamson* eliminated the so-called “strong” presumption against applying
13 35 U.S.C. § 112, ¶ 6, to terms that do not use the word “means” and rejected prior
14 statements that this presumption “is not readily overcome” and that this presumption
15 cannot be overcome “without a showing that the limitation essentially is devoid of
16 anything that can be construed as structure.” *Id.* (citation omitted) Instead,
17 “[h]enceforth, we will apply the presumption as we have done prior to *Lighting World*
18” *Id.* (citing *Lighting World, Inc. v. Birchwood Lighting, Inc.*, 382 F.3d 1354, 1358
19 (Fed. Cir. 2004)). *Williamson* affirmed a district court finding that “distributed learning
20 control module” was a means-plus-function term that was indefinite because of lack of

1 corresponding structure, and *Williamson* noted that “‘module’ is a well-known nonce
2 word.” 792 F.3d at 1350.

3 Claim 1 of the ’067 Patent, for example, recites in relevant part (emphasis added):

4 1. A numerical jet machine for viscous product for the application of a
coating to a plastic face of a substrate, including:

5 a reservoir configured for including a viscous product having
viscosity between 100 and 1000 centipoises,

6 an input magazine and an output magazine,
work stations and a computer device to manage the operations on
7 each of the work stations,

8 a movement device for moving the substrate between the different
work stations,

9 *a device for grasping and transferring the substrate from the input
magazine to the movement device and from the movement device to the
output magazine, ...*

10 As a threshold matter, the prosecution history cited by Plaintiff is unpersuasive.

11 Plaintiff submits that the examiner cited the “Schlatterbeck” reference as disclosing a

12 device for grasping and transferring, and Plaintiff argues that the patent examiner’s

13 citation of prior art for this “device” limitation demonstrates that the limitation connotes

14 structure. (Dkt. 61 at 14.) The Federal Circuit, however, rejected such an argument in

15 *Team Worldwide Corp. v. Intex Recreation Corp.*, No. 2020-1975, 2021 WL 4130634, at

16 *6 (Fed. Cir. Sept. 9, 2021) (“TWW argues that the examiner’s citation to pressure

17 sensors in various prior art references during prosecution as disclosing the ‘pressure

18 controlling assembly’ limitation is evidence that a skilled artisan would understand that

19 term to define structure. We are unpersuaded.”) (citation omitted). More specifically,

20 the Federal Circuit there noted that the patentee did not “explain why an examiner’s

1 ability to recognize that a pressure sensor in the prior art may perform some of the stated
2 *functions* of the ‘pressure controlling assembly’ is evidence that the term itself connotes
3 *structure.*” *Id.*

4 Also, the word “device” can, in some circumstances, be a “nonce” word that lacks
5 structural meaning. *See Williamson*, 792 F.3d at 1350 (“Generic terms such as . . .
6 ‘device’ and other nonce words that reflect nothing more than verbal constructs may be
7 used in a claim in a manner that is tantamount to using the word ‘means’ because they
8 ‘typically do not connote sufficiently definite structure’ and therefore may invoke § 112,
9 para. 6.”) (quoting *Mass. Inst. of Tech. v. Abacus Software*, 462 F.3d 1344, 1354 (Fed.
10 Cir. 2006)); *see also Robert Bosch, LLC v. Snap-On Inc.*, 769 F.3d 1094, 1099, 1101
11 (Fed. Cir. 2014) (finding “program recognition device” to be subject to § 112, ¶ 6; noting
12 that “merely listing examples of possible structures is insufficient to avoid invocation of
13 § 112, ¶ 6”); *Advanced Mktg. Sys., LLC v. CVS Pharmacy, Inc.*, No. 6:15-CV-134-JRG-
14 KNM, 2016 WL 1741396, at *18 (E.D. Tex. May 3, 2016) (finding “device for . . .”
15 limitations to be subject to § 112, ¶ 6).

16 It is appropriate, however, to consider the claim limitations as a whole. Here, the
17 “device” at issue is recited as being for “grasping and transferring the substrate from the
18 input magazine to the movement device and from the movement device to the output
19 magazine.” Although “grasping and transferring” is a functional phrase, this limitation
20 as whole refers to a class of devices that are known in the art for grasping materials and

1 transferring materials from one place to another within a piece of equipment, or from one
2 piece of equipment to another piece of equipment, especially in the context of ink
3 printing. *See MTD Prods. Inc. v. Iancu*, 933 F.3d 1336, 1341–42 (Fed. Cir. 2019)
4 (“[E]ven if the claims recite a nonce term followed by functional language, other
5 language in the claim ‘might inform the structural character of the limitation-in-question
6 or otherwise impart structure’ to the claim term.”). The word “grasping,” in particular,
7 carries mechanical connotations, and this finding is particularly appropriate here because
8 this “device for grasping and transferring” limitation is not a point of novelty but rather
9 appears to have been intended to refer to a broad class of structures that were already
10 known at the time of the invention. The disclosure of a “device for grasping” in the
11 context of other mechanical components in the ’067 Patent is also notable. *See* ’067
12 Patent at 3:38–67 (“A device for grasping (4) the substrates (13) is used to extract the
13 substrates (13) from the input magazine (5) and to place them on a conveyor in order to
14 move them along a working chain with several work stations.”); *see also Apple Inc. v.*
15 *Motorola, Inc.*, 757 F.3d 1286, 1299 (Fed. Cir. 2014) (“We need not decide here whether
16 the term ‘heuristic,’ by itself, connotes sufficient structure to maintain the presumption
17 against means-plus-function claiming because, in this case, the claims do not nakedly
18 recite heuristics without further description in the remaining claim language and
19 specification. To the contrary, the claim language and specification disclose the
20 heuristics’ operation within the context of the invention, including the *inputs*, *outputs*,

1 *and how certain outputs are achieved.”*) (emphasis added), *overruled on other grounds*
2 *by Williamson*, 792 F.3d 1339.

3 This finding is consistent with principles articulated by the Federal Circuit prior to
4 the abrogated *Lighting World* decision, including that a class of mechanical devices can
5 be recognized as a known class of structures “even though the definitions are expressed
6 in functional terms.” *See Greenberg v. Ethicon Endo-Surgery, Inc.*, 91 F.3d 1580, 1583
7 (Fed. Cir. 1996) (finding that “detent mechanism” was not a means-plus-function term
8 because “‘detent’ denotes a type of device with a generally understood meaning in the
9 mechanical arts, even though the definitions are expressed in functional terms”; “It is
10 true that the term ‘detent’ does not call to mind a single well-defined structure, but the
11 same could be said of other commonplace structural terms such as ‘clamp’ or
12 ‘container.’ What is important is not simply that a ‘detent’ or ‘detent mechanism’ is
13 defined in terms of what it does, but that the term, as the name for structure, has a
14 reasonably well understood meaning in the art.”).

15 Finally, devices for grasping and transferring need not have been disclosed in
16 detail in the specification because “a ‘patent need not teach, and preferably omits, what
17 is well known in the art.’” *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 959 F.3d
18 1091, 1102 (Fed. Cir. 2020) (quoting *Spectra-Physics, Inc. v. Coherent, Inc.*, 827 F.2d
19 1524, 1534 (Fed. Cir. 1987)).
20

1 The word “device” as used in the context of “a device for grasping and
2 transferring the substrate from the input magazine to the movement device and from the
3 movement device to the output magazine” thus connotes structure such that Defendant
4 has not rebutted the presumption against means-plus-function treatment.

5 The opinion of Defendant’s expert to the contrary (even if it were not stricken in
6 Section IV, above) is unpersuasive. (See Dkt. 62, Ex. 3, Feb. 24, 2023 Reinholtz Decl.
7 at ¶ 38.)

8 The Special Master therefore need not reach Plaintiff’s argument that “the
9 patentee cannot have intended the phrase to invoke § 112, ¶ 6, because this is a
10 translation of the same phrase appearing in the French priority document,” and that
11 “[t]he original French language could not have been intended to invoke § 112, ¶ 6,
12 because no such provision exists in European patent law.” (Dkt. 61 at 13–14.)

13 At the April 17, 2023 hearing, Defendant emphasized *Welker Bearing* and other
14 cases in which the term at issue was recited in the context of mechanical structures but
15 the court nonetheless found that the presumption against means-plus-function treatment
16 was rebutted. *Welker Bearing Co. v. PHD, Inc.*, 550 F.3d 1090, 1096 (Fed. Cir. 2008);
17 *see Aspex Eyewear, Inc. v. Altair Eyewear, Inc.*, Nos. 2007-1380, -1407, 288 F. App’x
18 697, 704 (Fed. Cir. 2008) (“retaining mechanisms”); *see also K2M, Inc. v.*
19 *OrthoPediatrics Corp.*, No. 17–61–GMS, 2018 WL 2426660, at *1 (D. Del. May 30,
20 2018) (“grasping members”); *Diebold Nixdorf, Inc. v. Int’l Trade Comm’n*, 899 F.3d

1 1291, 1302 (Fed. Cir. 2018) (“cheque standby unit”); *Team Worldwide Corp. v. Intex*
2 *Recreation Corp.*, No. 2020-1975, 2021 WL 4130634, at *6 (Fed. Cir. Sept. 9, 2021)
3 (“pressure controlling assembly”); *Kyocera Senco Indus. Tools Inc. v. Int’l Trade*
4 *Comm’n*, 22 F.4th 1369, 1380 (Fed. Cir. 2022) (“lifter member”).

5 In particular, *Welker Bearing* distinguished *Greenberg* (discussed above), in
6 which the Federal Circuit “examined several [dictionary] definitions of ‘detent,’” and
7 “[b]ecause these definitions connoted adequate structure that was reasonably well
8 understood in the art, th[e] court concluded that ‘detent mechanism’ was not a mere
9 functional placeholder.” 550 F.3d at 1096. The *Diebold* case distinguished *Greenberg*
10 similarly. See 899 F.3d at 1302.

11 At the April 17, 2023 hearing, however, Plaintiff persuasively distinguished these
12 authorities cited by Defendant. For example, Plaintiff persuasively argued that *K2M* is
13 factually distinguishable as involving medical technology related to bone anchors, thus
14 relating to a newer area of technology than, for example, ink printing technology that has
15 involved grasping and moving paper in various ways for hundreds of years. See 2018
16 WL 2426660, at *1 n.2. Likewise, neither the “pressure controlling assembly” in *Team*
17 *Worldwide* nor the “retaining mechanisms” in *Aspex* had the same mechanical
18 connotations that are present in “a device for grasping and transferring the substrate from
19 the input magazine to the movement device and from the movement device to the output
20 magazine.” *Team Worldwide*, 2021 WL 4130634, at *6; *Aspex*, 288 F. App’x at 703–04.

1 Finally, *Kyocera* noted that “no party claims [‘]lifter member[’] has a plain and ordinary
2 meaning to those skilled in the art.” 22 F.4th at 1380. As discussed above, the term here
3 at issue has mechanical structural connotations, and Defendant has not rebutted the
4 presumption against means-plus-function treatment for this non-means term.

5 The Special Master therefore hereby rejects Defendant’s proposal that this is a
6 means-plus-function term. Defendant presents no alternative proposed construction, and
7 no further construction is necessary.

8 The Special Master accordingly hereby construes **“a device for grasping and**
9 **transferring the substrate from the input magazine to the movement device and**
10 **from the movement device to the output magazine”** to have its **plain meaning**.

1 **4. “a reservoir configured for including a viscous product having viscosity between**
2 **100 and 1000 centipoises”**

3 “a reservoir configured for including a viscous product having viscosity 4 between 100 and 1000 centipoises” (’067 Patent, Claims 1, 16)	
5 Plaintiff MGI’s Proposal	6 Defendant Duplo’s Proposal
7 This term has its plain and ordinary 8 meaning requiring no construction, 9 indicating that the reservoir is capable 10 of including the recited viscous 11 product, but that it need not actually include a viscous product having the recited characteristics and is neither indefinite under 35 U.S.C. § 112(2) nor a means-plus-function claim under 35 U.S.C. § 112(6).	“Configured for” means more than mere capability; set up for operation especially in a particular way Indefinite as to “a viscous product having viscosity between 100 and 1000 centipoises.” (See also ’067 patent at claim 32.)

12 (Dkt. 60, Ex. 1 at 22–23; Dkt. 62 at 6.)

13 In the Tentative R&R, the Special Master tentatively construed this term as
14 follows: “plain meaning.”

15 (a) The Parties’ Positions

16 Plaintiff argues: “[E]ven under Duplo’s proposed construction it is undisputed that
17 a ‘viscous product’ does not have to fall within the recited range for the claim to be
18 infringed, provided that the reservoirs is [sic] ‘set up for operation’ so that it *could*
19 accommodate a product of that viscosity. It is therefore undisputed that the actual
20 viscosity of the viscous products at any given time or temperature, or under other

1 conditions, is not a claim limitation.” (Dkt. 61 at 15.) Further, Plaintiff argues that
2 “[t]he specification indicates that the reservoir is not set up for operation in a particular
3 way; on the contrary, it lists instead, ‘non-limiting examples of products contained in the
4 reservoir.’” (*Id.* (citing ’067 Patent at 4:3–13).)

5 Plaintiff also argues, as to Defendant’s argument that the viscosity limitation is
6 indefinite: “[T]he actual viscosity of the viscous product at any given point in time or
7 under a particular set of conditions is *not* a limitation of the claim. Instead, the limitation
8 concerns the reservoir itself, indicating that it must be capable of accommodating a
9 viscous product in that range.” (Dkt. 61 at 16.) Plaintiff submits that “[e]ven if a change
10 in temperature may cause viscous product to move in or out of the recited viscosity
11 range, here a person of ordinary skill in the art would understand that the claims require
12 that the reservoir be capable of accommodating the viscous product if and when the
13 viscous product enters the stated viscosity range at any temperature.” (*Id.*) Finally,
14 Plaintiff argues that “[t]he specification confirms that it was common in the art to refer to
15 inks by viscosity without specifying other parameters.” (*Id.*)

16 Defendant argues that “MGI essentially replaces the word ‘configured for’ with
17 the word ‘capable of,’” which Defendant argues “is inconsistent with the intrinsic
18 evidence.” (Dkt. 62 at 6.) Defendant argues that “MGI’s proposal of mere capability
19 attempts to improperly read out the core aspect of the alleged invention being set up for
20 operation with high viscosity products.” (*Id.* at 7.) Defendant also argues: “This

1 limitation requires that the reservoir is configured for a viscous product having a
2 viscosity within a precise range, between 100 and 1000 centipoises. The problem is that
3 the patent does not provide any guidance on how to determine whether such a viscous
4 product is within that precise viscosity range, rendering the limitation indefinite.” (*Id.*
5 at 8.) Defendant submits that “depending on conditions such as temperature or
6 measurement method, the viscosity of a product can fall inside or outside the claimed
7 range.” (*Id.* (citation omitted).)

8 Plaintiff responds that “none of th[e dictionary] definitions [cited by Defendant]
9 would read ‘configured to’ as requiring the presence of ink—all are met if the reservoir
10 is capable of accommodating ink in the recited viscosity range.” (Dkt. 70 at 10.)

11 Plaintiff reiterates that “[n]othing in the words ‘configured for’ requires that the reservoir
12 be specifically set up to accommodate only certain of these non-limiting examples, so
13 long as it is capable of accommodating product of the recited range.” (*Id.*) Further,
14 Plaintiff argues that “the claim does not require ink of a certain viscosity as a limitation
15 but instead a reservoir that can accommodate a product that enters into that viscosity
16 range, regardless of the temperature producing it,” and “documents contemporaneous
17 with the date of invention show that it was common in the trade to refer to the viscosity
18 of ink or other product in centipoise, without further specifying a full laboratory regimen
19 for the measurement.” (*Id.* at 11.)

1 Defendant responds that the patentee chose to use the phrase “configured for,”
2 which courts and dictionaries state requires more than mere capability, and “[t]he
3 language ‘set up for operation especially in a particular way’ is also consistent with the
4 intrinsic evidence, which describes a machine set up for printing high-viscosity
5 products.” (Dkt. 69 at 8.) Further, Defendant argues: “MGI argues essentially that the
6 claimed ‘reservoir’ can be ‘configured for’ products having any viscosity, as long as
7 under some hypothetical conditions, the reservoir is capable of accommodating the
8 product if and when it, in MGI’s words, ‘enters’ viscosity between 100 and 1000
9 centipoises. MGI’s interpretation is not true to the spirit of the alleged invention, which
10 is a printer for high-viscosity products.” (Dkt. 70 at 9 (citing ’067 at 1:25–36).)
11 Defendant concludes that “[t]here is indefiniteness here because an accused product may
12 be configured to include viscous products having viscosity between 100 and 1000
13 centipoises under some conditions, but not be configured to include such products (e.g.,
14 it may break down) under other conditions.” (*Id.* (citing *Halliburton Energy Servs., Inc.*
15 *v. M-I LLC*, 514 F.3d 1244, 1255 (Fed. Cir. 2008)).)

16 (b) Analysis

17 The Brief Summary of the Invention states:

18 The invention concerns the area of printing without physical contact onto a
19 substrate of which at least one face is in plastic, and more particularly a
20 machine, independent from a printing system, which allows, before or after
the printing system, the application by jet of a product having a viscosity
going up to 1000 centipoises, and described as average to large, such as

1 varnish, glue, conducting or scratchable ink, onto a substrate of variable
2 thickness and dimensions.

3 '067 Patent at 1:26–33. The specification, further discloses:

4 The projection device includes a reservoir (9) which contains the viscous
5 product to be projected. Non limiting examples of products contained in the
6 reservoir are varnish, scratchable ink, conducting ink or glue whose average
7 viscosity is between 100 and 1000 centipoises, that is much higher than the
8 viscosity of printing inks, which are normally ten or so centipoises. The
9 feeding of the reservoir not shown is effected, for example, manually or
 automatically by a feed circuit or indeed of semi-automatically by device
 controlled by an operator. The reservoir (9) is connected to a pressurising
 device (10). In fact, the projection system requires a given pressure for
 correct operation. The pressurising device therefore includes means to
 control and regulate the pressure of the product sent to the nozzles, and in a
 non limiting manner controlled by the computer.

10 '067 Patent at 4:3–15.

11 Claim 1 of the '067 Patent, for example, recites in relevant part (emphasis added):

12 1. A numerical jet machine for viscous product for the application of a
13 coating to a plastic face of a substrate, including:

14 *a reservoir configured for including a viscous product having
 viscosity between 100 and 1000 centipoises, ...*

15 On one hand, as discussed in the *Wapp Tech* case cited Defendant, *Wapp Tech*
16 *Ltd. P'Ship v. Seattle Spinco, Inc., et al.*, No. 4:18-CV-469, -501, -519, 2020 WL
17 1983087 (E.D. Tex. Apr. 27, 2020), the Court of Appeals for the Federal Circuit has
18 stated that the phrase “configured to” has a narrower meaning than merely “capable of”
19 or “suitable for.” *Aspex Eyewear, Inc. v. Marchon Eyewear, Inc.*, 672 F.3d 1335, 1349
20 (Fed. Cir. 2012) (interpreting “adapted to” in the “narrower” sense of “configured to”
 rather than the “broader sense” of “capable of” or “suitable for”; “the phrase ‘adapted to’

1 is most naturally understood to mean that the arms and magnetic members are designed
2 or configured to accomplish the specified objective, not simply that they can be made to
3 serve that purpose”); *see also Radware Ltd. v. A10 Networks, Inc.*, No. C-13-02024-
4 RMW, 2014 WL 1572644, at *12 (N.D. Cal. Apr. 18, 2014) (recognizing “configured
5 to” as a “patent term of art”; noting that “courts have generally interpreted ‘configured
6 to’ more narrowly than simply ‘capable of’ ”) (collecting cases); *cf. Telemac Cellular*
7 *Corp. v. Topp Telecom, Inc.*, 247 F.3d 1316, 1330 (Fed. Cir. 2001) (“[T]hat a device is
8 capable of being modified to operate in an infringing manner is not sufficient, by itself,
9 to support a finding of infringement.”).

10 On the other hand, a requirement to be “configured” to operate in a particular way
11 does not necessarily require actual operation in that particular way. Defendant’s
12 proposal of “set up for operation especially in a particular way” is ambiguous as to
13 whether actual operation in a particular way is required. Moreover, Defendant’s
14 proposal of the word “especially” is vague.

15 The *Rex Med* case, cited by Defendant, cited dictionaries and found that
16 “configure” means “set up for operation especially in a particular way.” *Rex Med., L.P.*
17 *v. Intuitive Surgical, Inc.*, No. 19-005 (MN), 2020 WL 2128795, at *5 (D. Del. May 5,
18 2020) (“Configure, as defined by dictionaries, means set up for operation especially in a
19 particular way.”). The fact that some dictionaries define the word “configure” in this
20 way is not in dispute. (See Dkt. 62, Exs. 4–6.) But the *Rex Med* construction of a

1 different term in an unrelated patent is not binding here, and “[a] claim should not rise or
2 fall based upon the preferences of a particular dictionary editor, or the court’s
3 independent decision, uninformed by the specification, to rely on one dictionary rather
4 than another.” *Phillips*, 415 F.3d at 1322; *see id.* at 1321 (“heavy reliance on the
5 dictionary divorced from the intrinsic evidence risks transforming the meaning of the
6 claim term to the artisan into the meaning of the term in the abstract, out of its particular
7 context, which is the specification”).

8 On balance, “a reservoir configured for including a viscous product having
9 viscosity between 100 and 1000 centipoises” does not limit a reservoir to being actually
10 used with a viscous product having viscosity between 100 and 1000 centipoises (and
11 does *not* require a reservoir to be configured so as to be *unable* to be used with a viscous
12 product having viscosity *other than* between 100 and 1000 centipoises). At the April 17,
13 2023 hearing, Defendant agreed with this conclusion regarding “configured for.”

14 Defendant also argues that this term is indefinite as to “a viscous product having
15 viscosity between 100 and 1000 centipoises” because, Defendant argues, viscosity can
16 vary depending on conditions, such as temperature. (*See, e.g.*, Dkt. 62, Ex. 7, *The*
17 *Printing Ink Manual* 774 (5th ed. 1999).)

18 Defendant’s argument is unavailing because the claim limitation here at issue is
19 directed to the viscosity range that the reservoir can handle, which is not a property that
20 would vary with conditions such as temperature. In other words, the configuration of the

1 reservoir for handling a particular range of viscosities is a limitation of the claim, but the
2 viscosity of the viscous product is not a limitation of the claim. This is therefore *not* a
3 case that would require “a separate infringement determination for every set of
4 circumstances in which the composition may be used, [wherein] such determinations are
5 likely to result in differing outcomes (sometimes infringing and sometimes not).”

6 *Halliburton Energy Servs., Inc. v. M-I LLC*, 514 F.3d 1244, 1255 (Fed. Cir. 2008).

7 As to whether the phrase “viscosity between 100 and 1000 centipoises” is
8 indefinite, the specification itself discloses that “[t]here already exist jet printing systems
9 operating with inks whose viscosity is low and of the order of ten or so centipoises,” thus
10 referring to viscosity in terms of centipoises *without* any accompanying reference to
11 temperature or other conditions that might affect viscosity. ’067 Patent at 1:34–36. Also
12 of note, although not dispositive, the patent examiner cited prior art that the examiner
13 asserted met this claim language, thus demonstrating an understanding of this particular
14 term. (Dkt. 61, Ex. 8, Nov. 14, 2011 Office Action at 12, 15 & 17 (MGI_000724,
15 MGI_000727, MGI_000729) (pp. 242, 245 & 247 of 764 of Ex. 8).)

16 Defendant also cites authority that indefiniteness can arise if “more than one
17 measurement method could be used.” *Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 789 F.3d
18 1335, 1345 (Fed. Cir. 2015); *Dow Chem. Co. v. Nova Chemicals Corp. (Canada)*, 803
19 F.3d 620, 634 (Fed. Cir. 2015) (similar). Here, although Defendant has shown that
20 different measurements could be obtained at different temperatures, Defendant has *not*

1 shown that more than one measurement method could be used at a particular
2 temperature. Defendant’s expert opines that viscosity “can be measured through various
3 methods and under various conditions,” but even if this opinion were not stricken in
4 Section IV, above, the expert refers only to varying temperatures and does not discuss
5 different purported methods for measuring viscosity at a particular temperature. (*See*
6 Dkt. 62, Ex. 3, Feb. 24, 2023 Reinholtz Decl. at ¶¶ 51–52.)

7 The Special Master therefore hereby expressly rejects Defendant’s proposed
8 construction for “configured” and expressly rejects Defendant’s indefiniteness argument,
9 and no further construction is necessary. *See U.S. Surgical Corp. v. Ethicon, Inc.*, 103
10 F.3d 1554, 1568 (Fed. Cir. 1997) (“Claim construction is a matter of resolution of
11 disputed meanings and technical scope, to clarify and when necessary to explain what
12 the patentee covered by the claims, for use in the determination of infringement. It is not
13 an obligatory exercise in redundancy.”); *see also O2 Micro Int’l Ltd. v. Beyond*
14 *Innovation Tech. Co.*, 521 F.3d 1351, 1362 (Fed. Cir. 2008) (“[D]istrict courts are not
15 (and should not be) required to construe every limitation present in a patent’s asserted
16 claims.”); *Finjan, Inc. v. Secure Computing Corp.*, 626 F.3d 1197, 1207 (Fed. Cir. 2010)
17 (“Unlike *O2 Micro*, where the court failed to resolve the parties’ quarrel, the district
18 court rejected Defendants’ construction.”); *Bayer Healthcare LLC v. Baxalta Inc.*, 989
19 F.3d 964, 977–79 (Fed. Cir. 2021).

The Special Master accordingly hereby construes “**a reservoir configured for including a viscous product having viscosity between 100 and 1000 centipoises**” to have its **plain meaning**.

5. “said computer device managing the operations on each of the work stations according to the position of the substrate, to the read station and to the drying station, and/or with the management of the information received at the different work stations to coordinate the operations”

“said computer device managing the operations on each of the work stations according to the position of the substrate, to the read station and to the drying station, and/or with the management of the information received at the different work stations to coordinate the operations”
(’067 Patent, Claims 16, 32)

Plaintiff MGI’s Proposal	Defendant Duplo’s Proposal
This term has its plain and ordinary meaning requiring no construction and is neither indefinite under 35 U.S.C. § 112(2) nor a means-plus-function claim under 35 U.S.C. § 112(6).	Indefinite

(Dkt. 60, Ex. 1 at 27; Dkt. 62 at 9.)

In the Tentative R&R, the Special Master tentatively construed this term as follows: “indefinite.”

(a) The Parties’ Positions

Plaintiff argues that “the claim language of the first phrase is clear, that the computer manages the operations of the workstation according to the position of the

1 substrate in relation to the read station and the drying station as the substrate moves from
2 the read station to the drying station,” and “[t]he conjunction ‘and/or’ is not indefinite
3 and indicates inclusive disjunction.” (Dkt. 61 at 18.)

4 Defendant argues that “this term on its face does not make sense,” and a “person
5 of ordinary skill in the art is left to wonder how the language ‘and/or with the
6 management of the information received at the different work stations’ is connected to
7 other language in the term, as it does not make sense when read with the language
8 preceding ‘and/or.’” (Dkt. 62 at 9.)

9 Plaintiff responds that “it would be clear to one of ordinary skill that the language
10 following ‘and/or’ indicates that the machine can use ‘information received at
11 different workstations’ either in conjunction with or as an alternative to using position
12 of the substrate.” (Dkt. 70 at 12.)

13 Defendant responds that “[e]ven assuming MGI’s argument that ‘in relation’ and
14 other language should be added to the plain language of the term (which is questionable
15 because none of the specification portions cited by MGI describe use of the substrate’s
16 relative position), that does not save the term, as ‘courts may not redraft claims, whether
17 to make them operable or to sustain their validity.’” (Dkt. 69 at 10 (quoting *Chef Am.,
18 Inc. v. Lamb-Weston, Inc.*, 358 F.3d 1371, 1374 (Fed. Cir. 2004)).)

19 At the April 17, 2023 hearing, the parties presented oral arguments.
20

1 (b) Analysis

2 The definiteness requirement requires that “a patent’s claims, viewed in light of
3 the specification and prosecution history, inform those skilled in the art about the scope
4 of the invention with reasonable certainty,” otherwise the claim is indefinite. *Nautilus,*
5 *Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 910 (2014).

6 As a general matter, the conjunction “and/or” is not necessarily indefinite. *See*
7 *Cipher Pharms. Inc. v. Actavis Labs. FL, Inc.*, 99 F. Supp. 3d 508, 518 (D.N.J. 2015)
8 (“the use of ‘and/or’ clearly indicates an inclusive disjunction . . . , and therefore the
9 claim is not indefinite”).

10 Here, however, the claim language is not grammatically correct and appears to be
11 nonsensical, and nothing in the surrounding claim language resolves this lack of clarity.
12 Claim 16 of the ’067 Patent, for example, recites (emphasis added):

13 16. A numerical jet machine for the application of a viscous product on a
14 substrate, comprising:
15 a reservoir configured for including a viscous product having
16 viscosity between 100 and 1000 centipoises;
17 an input magazine and an output magazine;
18 one or more work stations and a computer device to manage the
19 operations on each of the work stations;
20 a movement device for moving the substrate between the work
 stations;
 a device for grasping and transferring the substrate from the input
 magazine to the movement device and from the movement device to the
 output magazine;
 said one or more work stations including:
 a read station for reading and determining at least one position of the
 substrate and/or of markers placed on the substrate;
 a drying station; and

1 an application station comprising a series of nozzles arranged in a
2 ramp, each nozzle being:

3 separately controllable by the computer device,
4 actuatable by a piezoelectric actuator, and

5 arranged to be fed from the reservoir configured for including said
6 viscous product to be applied onto the substrate during relative movement
7 between the substrate and the application station, to apply the product in a
8 given application zone on the substrate,

9 *said computer device managing the operations on each of the work
10 stations according to the position of the substrate, to the read station and to
11 the drying station, and/or with the management of the information received
12 at the different work stations to coordinate the operations; and*

13 *said application zone being defined for each substrate by a
14 configuration file concerning the zone shape, the zone position on the
15 substrate in relation to the position determined by the read station, the
16 quantity of product to be applied, the computer device arranged to be
17 responsive to the configuration file to translate the information into
18 parameters of relative movement of the substrate and of the nozzles, and
19 selective control of each actuator of each nozzle.*

20 Plaintiff submits that “[t]he second phrase provides an optional alternative
regarding the management discussed in the first phrase, with the conjunction ‘and/or.’”
(Dkt. 61 at 18.) Plaintiff also argues that “the claim language of the first phrase is clear,
that the computer manages the operations of the workstation according to the position of
the substrate *in relation to* the read station and the drying station as the substrate moves
from the read station to the drying station.” (*Id.* (emphasis added).)

Plaintiff’s suggested interpretation, however, would amount to redrafting the
claims by inserting “in relation to,” and “courts may not redraft claims, whether to make
them operable or to sustain their validity.” *Chef Am., Inc. v. Lamb-Weston, Inc.*, 358
F.3d 1371, 1374 (Fed. Cir. 2004).

1 The disclosure in the specification cited by Plaintiff does not avoid indefiniteness
2 because it merely discloses a particular embodiment and, in any event, does not explain
3 the claim language that is at issue:

4 Let us first consider FIG. 1. The machine is controlled by a control
5 computer (10) which controls the different work stations, and also which
6 collects the information from the different sensors. For example, the sensors
7 give information on the positions of the substrates (13), on the configuration
8 data of the substrates (13) or on the validation information following an
9 operation, effected correctly or not. The substrates (13) awaiting printing
10 are placed in an input magazine (5) with a capacity specified according to
11 the nature of the substrate (13) and of the printing needs. In one
12 implementation example, the input magazine (5) is designed to accept
13 several thousand substrates (13) of variable nature, of variable thickness up
14 to 800 μm and of variable dimensions (credit-card format up to format AO)
15 and possibly of which at least one face is in plastic. Once the application
16 process has ended, the substrates (13) are stored in an output magazine (8)
with generally the same capacity as the input magazine (5). A device for
grasping (4) the substrates (13) is used to extract the substrates (13) from
the input magazine (5) and to place them on a conveyor in order to move
them along a working chain with several work stations. The first work
station of the chain is a margin stop (6) with indexing of the substrate (13)
which allows positioning in relation to two reference edges or the detection
of a printed marker on the substrate (13). A sensor detects the position
information and sends it to the computer by a cable or wireless network.
This information, stored in memory in the computer, will then be reused by
other work stations controlled by the computer. Checks are also performed
in order to detect the presence of a substrate (13) unique to each station on
the conveyor.

17 '067 Patent at 3:38–67; *see id.* at Fig. 1. This disclosure does not resolve the
18 grammatically nonsensical claim language. For example, the term “read station” is not
19 described in the specification or related to the other components of the above limitation.
20 As another example, the arrow labeled with reference numeral 3 in Figure 1 is not

1 mentioned in the specification at all, let alone described in any way that would lend any
2 clarity to the claim limitation here at issue.

3 Finally, at the April 17, 2023 hearing, Plaintiff argued that this term, at first blush,
4 is perhaps difficult to read because of the absence of a serial comma, but Plaintiff argued
5 that this term can be readily understood as referring to managing operations according to
6 the position of the substrate, according to the read station, and according to the drying
7 station, followed by “and/or” introducing the next prepositional phrase. Here again,
8 Plaintiff is impermissibly proposing to redraft the claim. *See Chef Am.*, 358 F.3d at
9 1374. Also, Plaintiff’s proposal, even if accepted, would itself raise uncertainty as to
10 what “according to the read station” and “according to the drying station” could mean.
11 Plaintiff suggested at the hearing that “according to the read station,” for example, refers
12 to one or more of the configuration of the read station, the status of the read station, and
13 information received from the read station. *See* ’067 Patent at 3:38–67 (“The machine is
14 controlled by a control computer (10) which controls the different work stations, and
15 also which collects the information from the different sensors.”) & 4:41–49. This is,
16 however, simply too great of an analytical leap and is not reasonably clear from the
17 claim language or the other intrinsic evidence. *See id.*

18 This disputed term thus fails to “inform those skilled in the art about the scope of
19 the invention with reasonable certainty.” *Nautilus*, 572 U.S. at 910.

The Special Master therefore hereby finds that **“said computer device managing the operations on each of the work stations according to the position of the substrate, to the read station and to the drying station, and/or with the management of the information received at the different work stations to coordinate the operations”** in Claims 16 and 32 of the '067 Patent is **indefinite**.

6. “viscosity between 10 and 1000 centipoises”

“viscosity between 10 and 1000 centipoises” (’067 Patent, Claim 32)	
Plaintiff MGI’s Proposal	Defendant Duplo’s Proposal
This term has its plain and ordinary meaning requiring no construction and is neither indefinite under 35 U.S.C. § 112(2) nor a means-plus-function claim under 35 U.S.C. § 112(6).	Indefinite.

(Dkt. 60, Ex. 1 at 31; Dkt. 62 at 10.)

In the Tentative R&R, the Special Master tentatively construed this term as follows: “plain meaning.”

(a) The Parties’ Positions

Plaintiff argues that “[t]he term ‘viscosity between 10 and 1000 centipoise’ is not indefinite for the same reasons that the phrase ‘viscosity between 100 and 1000 centipoise’ is not indefinite in Term 4,” which is addressed above. (Dkt. 61 at 18.)

1 Defendant argues that “[l]ike Term 4 above, this term is indefinite because the
2 patent does not provide any guidance on how to determine whether a viscous product is
3 within the claimed viscosity range.” (Dkt. 62 at 10.)

4 Plaintiff responds that “Duplo offers no additional arguments to support its
5 contention that this term renders the claim indefinite, and it has failed to prove such
6 invalidity by any evidence (much less clear and convincing evidence).” (Dkt. 70 at 12.)

7 Defendant responds by incorporating its argument as to Term 4, above. (Dkt. 69
8 at 11.)

9 At the April 17, 2023 hearing, the parties submitted this term on the briefs and
10 presented no additional oral arguments as to this term.

11 (b) Analysis

12 For the same reasons that Defendant has not shown indefiniteness as to the term
13 “viscous product having viscosity between 100 and 1000 centipoises,” Defendant has
14 likewise not shown indefiniteness as to the term “viscosity between 10 and 1000
15 centipoises.”

16 The Special Master therefore hereby expressly rejects Defendant’s indefiniteness
17 argument. Defendant presents no alternative proposed construction, and no further
18 construction is necessary.

19 The Special Master accordingly hereby construes “**viscosity between 10 and**
20 **1000 centipoises**” to have its **plain meaning**.

7. “average viscosity”

“average viscosity” (’067 Patent, Claim 18)	
Plaintiff MGI’s Proposal	Defendant Duplo’s Proposal
This term has its plain and ordinary meaning requiring no construction and is neither indefinite under 35 U.S.C. § 112(2) nor a means-plus-function claim under 35 U.S.C. § 112(6).	Indefinite.

(Dkt. 60, Ex. 1 at 28; Dkt. 62 at 10.)

In the Tentative R&R, the Special Master tentatively construed this term as follows: “plain meaning.”

(a) The Parties’ Positions

Plaintiff argues that “[t]he ’067 Patent directly explains what it means by average viscosity” and “gives examples of materials having ‘average viscosity,’ and even provides viscosity ranges.” (Dkt. 61 at 19.)

Defendant argues that “[t]his term is indefinite for similar reasons as Terms 4 and 6 above,” and “a person of ordinary skill would not understand what ‘average’ is meant by ‘average viscosity’—for example, the patent does not provide guidance on what to consider for the ‘average,’ such as what data set.” (Dkt. 62 at 10.)

1 Plaintiff responds that “the patent specification explains the term ‘average
2 viscosity,’ and cites examples,” and “[t]he prosecution history similarly confirms the
3 definiteness of the term.” (Dkt. 70 at 12.)

4 Defendant responds that the examples in the specification cited by Plaintiff are
5 inapposite because “[t]he claim is not about *a product* that is of average viscosity,”
6 “[i]nstead, it is about *an average viscosity* of a given product.” (Dkt. 69 at 11.)

7 At the April 17, 2023 hearing, the parties presented oral arguments. Defendants
8 urged that the claim is unclear as to whether “average viscosity” refers to a particular
9 level of viscosity in the abstract or instead is tied to operation under certain conditions.
10 Plaintiff argues that “average” is a common word and that the viscosities of ink are
11 understood in the art, and Plaintiff submitted that inks are sold with particular viscosity
12 ratings and without any detailed specifications regarding the conditions under which the
13 viscosity is measured.

14 (b) Analysis

15 Claim 18 of the ’067 Patent recites (emphasis added):

16 18. A machine according to claim 16, wherein the computer device is
17 arranged to control the excitation of the actuator, in duration and power to
18 determine the dimensions and the shape of a viscous product drop in
accordance with an *average viscosity* of the product.

19 For essentially the same reasons that Defendant has not shown indefiniteness as to
20 the term “viscous product having viscosity between 100 and 1000 centipoises,” the fact

1 that viscosity can change with temperature does not give rise to any indefiniteness as to
2 the term “average viscosity.”

3 As to the word “average,” Defendant argues that “the patent does not provide
4 guidance on what to consider for the ‘average,’ such as what data set” (Dkt. 62 at 10),
5 but the word “average,” on its face, is a well-known term in mathematics, science, and
6 engineering, and Defendant does not show by any evidence, let alone by clear and
7 convincing evidence, that the word “average” is indefinite as used in Claim 18 of the
8 ’067 Patent. *See Sonix Tech. Co. v. Publ’ns Int’l, Ltd.*, 844 F.3d 1370, 1377 (Fed. Cir.
9 2017) (“Indefiniteness must be proven by clear and convincing evidence.”).

10 Of note, however, Plaintiff cites disclosures in the specification regarding
11 materials of “average” viscosity or “average fluidity” (Dkt. 61 at 19), but some of those
12 disclosures appear to refer to classes of products as “average” (rather than referring to an
13 average value of viscosity for a particular product). *Compare* ’067 Patent at 1:26–33 &
14 1:66–2:4 *with id.* at 4:3–13. In the context of above-reproduced Claim 18 of the ’067
15 Patent, the “average viscosity” is “an average viscosity of the product.” In other words,
16 “average viscosity” in Claim 18 of the ’067 Patent does *not* refer to a class of products
17 that are of so-called “average” viscosity but rather refers to an average viscosity value
18 for a particular product or class of products. Because this is already clear on the face of
19 the claim, however, no construction is necessary.

The Special Master therefore hereby expressly rejects Defendant’s indefiniteness argument. Defendant presents no alternative proposed construction, and no further construction is necessary.

The Special Master accordingly hereby construes “**average viscosity**” to have its plain meaning.

VI. DISPUTED TERMS IN U.S. PATENTS NO. 8,506,031 AND 8,783,806

8. “nozzle arrangement”

“nozzle arrangement” (’031 Patent, Claims 1, 7, 12, 18; ’806 Patent, Claims 1, 2, 4, 9, 12, 18–20, 22, 27, 28, 31)	
Plaintiff MGI’s Proposal	Defendant Duplo’s Proposal
This term has its plain and ordinary meaning requiring no construction, which means the printhead including the structure and configuration of the nozzles, and is neither indefinite under 35 U.S.C. § 112 nor a means-plus-function claim under 35 U.S.C. § 112(6).	“one or more nozzles”

(Dkt. 60, Ex. 1 at 2 (footnote omitted); Dkt. 62, at 11.)

In the Tentative R&R, the Special Master tentatively construed this term as follows: “a nozzle structure that includes one or more nozzles.”

1 (a) The Parties' Positions

2 Plaintiff submits that, “[e]ssentially, the parties disagree whether a ‘nozzle
3 arrangement’ includes anything beyond the nozzles themselves.” (Dkt. 61 at 19.)
4 Plaintiff argues that “in patent drafting the phrase to denote ‘one or more nozzles’ would
5 simply be ‘a nozzle,’” and “[n]ozzle arrangement’ clearly means something different
6 from just ‘a nozzle,’ and thus something different from one or more nozzles.” (*Id.*)
7 Plaintiff also submits that an amendment during prosecution replaced “array” with
8 “arrangement,” and “[t]he ‘nozzle arrangement’ unequivocally includes additional
9 structure other than just ‘one or more nozzles,’ like at least one piezoelectric actuator and
10 a heater, and Duplo’s construction is therefore manifestly incorrect.” (*Id.* at 20.)

11 Defendant argues that Plaintiff’s interpretation lacks support because the
12 specification does not use the term “printhead,” and “[f]urther, during prosecution, the
13 claimed ‘nozzle arrangement’ is never described to be a printhead.” (Dkt. 62 at 11.)
14 Defendant argues that “the intrinsic record supports Defendant’s proposed construction
15 that the ‘nozzle arrangement’ in the claims simply means one or more nozzles, rather
16 than the vague and ambiguous printhead structure and configuration as MGI argues.”
17 (*Id.* at 12.) Defendant also argues: “[A]ccording to the specification, the nozzle
18 arrangement can be, for example, either (1) one or more nozzles that scan from edge to
19 edge, or (2) a stationary array of nozzles. Defendant’s construction properly captures
20 both scenarios.” (*Id.*) Further, Defendant cites the prosecution history. (*Id.* at 13.)

1 Plaintiff responds that “[t]he claim language here supports MGI’s construction,”
2 and the statement in the Summary section of the specification that “the apparatus
3 comprises an ink jet nozzle arrangement having a piezoelectric actuator” “refutes
4 Duplo’s construction that a nozzle arrangement is only ‘one or more nozzles’ because
5 the sentence explains that a nozzle arrangement further includes a piezoelectric
6 actuator.” (Dkt. 70 at 13.) Plaintiff argues that “[o]nly MGI’s construction
7 accounts for all embodiments contemplated by the specification.” (*Id.* at 14.)

8 Defendant responds that “MGI overreaches in trying to import ‘printhead’ into the
9 claim,” and “[t]he ‘configuration of the nozzles’ part of MGI’s proposal already
10 characterizes the ‘arrangement’ aspect of the term.” (Dkt. 69 at 12 (citation omitted).)
11 Defendant also argues that “[t]here is nothing in Defendant’s construction that excludes
12 ‘nozzle arrangement’ from encompassing additional structures such as a piezoelectric
13 actuator or heater.” (*Id.* at 13.)

14 At the April 17, 2023 hearing, the parties presented oral arguments.

15 (b) Analysis

16 Claim 1 of the ’031 Patent, for example, recites (emphasis added):

17 1. A method of applying a coating of covering ink to a substrate moving
18 relative to *an ink jet nozzle arrangement* having a piezoelectric actuator for
19 applying droplets of covering ink to the substrate, the method comprising
20 controlling by a computer the shapes of the droplets by controlling the
shape of an electric waveform applied to the piezoelectric actuator, in
response to at least one of the viscosity and/or the temperature of the ink,
detected as the ink flows from the ink container to *the nozzle* by at least one
detector upstream from a heater included in *the nozzle arrangement*.

1 Plaintiff proposes that this “nozzle arrangement” must be a “printhead” that
2 includes nozzles, but neither the claims nor the specification refers to a “printhead.”

3 Plaintiff notes that an amendment during prosecution replaced an instance of the
4 word “array” with the word “arrangement,” but the claims at that time already recited a
5 “nozzle arrangement,” and Plaintiff does not show how this evidence purportedly
6 warrants requiring a “printhead.” (Dkt. 61, Ex. 5, July 5, 2012 Amendment Under 37
7 C.F.R. 1.111 at 2 (MGI_000407) (p. 156 of 232 of Ex. 5); *id.*, Mar. 18, 2013
8 Amendment Under 37 C.F.R. 1.114 at 2 & 4 (MGI_000443 & MGI_000445) (pp. 192 &
9 194 of 232 of Ex. 5.)

10 Plaintiff notes that, during prosecution of the '031 Patent, the patent examiner
11 cited a reference as “having a printhead including a temperature detector and a drive
12 waveform controller for controlling the printhead based on the detected temperature.”
13 (Dkt. 61, Ex. 5, Jan. 5, 2012 Office Action at 7–8 (pp. 142–43 of 232 of Ex. 5)
14 (MGI_000393–94); *see id.*, Search Notes (pp. 222–23 of 232 of Ex. 5) (MGI_000473–
15 74).) As a general matter, patent examiners are “assumed . . . to be familiar from their
16 work with the level of skill in the art.” *Am. Hoist & Derrick Co. v. Sowa & Sons, Inc.*,
17 725 F.2d 1350, 1359 (Fed. Cir. 1984), *abrogated on other grounds by Therasense, Inc. v.*
18 *Becton, Dickinson & Co.*, 649 F.3d 1276 (Fed. Cir. 2011); *PowerOasis, Inc. v. T-Mobile*
19 *USA, Inc.*, 522 F.3d 1299, 1304 (Fed. Cir. 2008) (citing *American Hoist*). Here,
20

1 however, the assertion that a “printhead” could satisfy the “nozzle arrangement”
2 limitation does *not* amount to evidence that a “nozzle arrangement” is a “printhead.”

3 Plaintiff’s proposed construction thus lacks support in the intrinsic record and
4 would tend to confuse rather than clarify the scope of the claims. Plaintiff notes that the
5 claims themselves contemplate that a “nozzle arrangement” includes more than just
6 nozzles because the claims recite that the “nozzle arrangement” includes “a piezoelectric
7 actuator” and “a heater,” but the recitals of these structures do not warrant importing a
8 “printhead” into the claims.

9 The presence of these other structures as part of the “nozzle arrangement” does,
10 however, weigh against Defendant’s proposal of construing “nozzle arrangement” as
11 merely “one or more nozzles.” Disclosures in the specification regarding “nozzle array
12 46” do not compel otherwise. *See* ’031 Patent at 4:4, 4:43–46 & 5:28; *see also id.* at
13 4:13, 5:15–16, 5:37 & 7:14 (“nozzles of array 46”); *see also id.* at 7:15–33 (“resistive
14 heater 45 is housed in each of the nozzles of array 46”). Regardless of whether a
15 plurality of nozzles share a heater or whether each nozzle has its own heater, the
16 significance of the term “nozzle arrangement” is that it includes one or more nozzles and
17 can potentially include other related elements, such as one or more heaters and one or
18 more piezoelectric actuators, as part of some structure. This is consistent with the
19 concluding paragraph of the specification, which does not preclude other structures from
20 being present:

1 [T]he present embodiments have to be considered as an illustration but they
2 may be modified within the field defined by the scope of the appended
3 claims. For example, the ink-jet nozzle arrangement can be one or more
4 ink-jet nozzles that scan from edge to edge or the illustrated stationary array
5 of ink-jet nozzles.

6 '031 Patent at 8:53–58. This is also consistent with prosecution history in which the
7 patentee used the word “nozzle” in remarks that referred to a recital of “nozzle
8 arrangement,” thus reinforcing that a “nozzle arrangement” is a structure or group of
9 structures. (See Dkt. 61, Ex. 5, Mar. 18, 2013 Amendment Under 37 C.F.R. 1.114 at 9
10 (MGI_000450) (p. 199 of 232 of Ex. 5) (“concerning said heater included in the nozzle,
11 the support is paragraph [0039]”) (emphasis omitted); *see also id.* at 10 (MGI_000451)
12 (p. 200 of 232 of Ex. 5) (“Asano’s apparatus does not allow the control of the ink
13 temperature as Asano does not recite any heater included in the nozzle”).)

14 At the April 17, 2023 hearing, the parties discussed at length the Special Master’s
15 tentative construction referring to a “structure.” Plaintiff explained that an
16 “arrangement” of nozzles is a shape formed by the nozzles or, stated another way, the
17 positions of the nozzles in relation to one another. Plaintiff also referred to this as a
18 configuration. Defendant’s proposal of “one or more nozzles,” at first blush, seems
19 similar to what Plaintiff now advocates, but Defendant’s proposal would be too narrow
20 when read in the context of surrounding claim language. Claim 1 of the ’031 Patent, for
example, recites “a heater included in the nozzle arrangement.” Defendant’s
construction might be interpreted as requiring that each nozzle includes a heater. This

would be any overly restrictive interpretation. Rather, as Plaintiff has argued, a heater could be positioned among a group of nozzles and provide heat for multiple nozzles. Although the word “structure” does not appear in these patents, referring to a “structure” in the construction is consistent with the usage of “nozzle arrangement” in the claims, specification, and prosecution history, wherein the term refers to something physical, while also allowing for the presence of ancillary components, such as heaters, as potentially being part of the “nozzle arrangement.”

The Special Master therefore hereby construes **“nozzle arrangement”** to mean **“a structure, or group of structures, that includes one or more ink jet nozzles.”**

9. “the ink container”

“the ink container” (’031 Patent, Claims 1, 12; ’806 Patent, Claims 2, 10, 20)	
Plaintiff MGI’s Proposal	Defendant Duplo’s Proposal
This term has its plain and ordinary meaning requiring no construction and is neither indefinite under 35 U.S.C. § 112(2) nor a means-plus-function claim under 35 U.S.C. § 112(6).	Indefinite

(Dkt. 60, Ex. 1 at 3; Dkt. 62 at 14.)

Claim 1 of the ’031 Patent, for example, recites (emphasis added):

1. A method of applying a coating of covering ink to a substrate moving relative to an ink jet nozzle arrangement having a piezoelectric actuator for

1 applying droplets of covering ink to the substrate, the method comprising
2 controlling by a computer the shapes of the droplets by controlling the
3 shape of an electric waveform applied to the piezoelectric actuator, in
4 response to at least one of the viscosity and/or the temperature of the ink,
5 detected as the ink flows from *the ink container* to the nozzle by at least one
6 detector upstream from a heater included in the nozzle arrangement.

7 Plaintiff argued: “‘The ink container’ is a standard component, familiar to anyone
8 of skill in the art, for any ink jet printer of the type described in the ’031 and ’806
9 patents. It is inherent,” and “the presence of a liquid in a device necessarily implies a
10 container for it.” (Dkt. 61 at 21 (citation omitted).)

11 Defendant argued that “there is no earlier recitation of ‘an ink container,’” and
12 “[a] person of ordinary skill is left to wonder whether ‘the ink container’ should be
13 corrected to read ‘an ink container,’ or instead that ‘the ink container’ be left as it is, and
14 the claim be corrected by adding an earlier recitation of ‘an ink container.’” (Dkt. 62
15 at 14 (citation omitted).) Defendant also argued that “[a]dding to the lack of reasonable
16 certainty as to what is the ‘the ink container’ recited in the claim, the specification
17 describes embodiments with multiple ink containers.” (*Id.* at 15 (citation omitted).)

18 Plaintiff responded that “indefiniteness considers what a person of ordinary skill
19 would understand after reading the specification,” “the specification explains that ink is a
20 liquid,” and “anyone of skill in the art would understand that the presence of liquid ink
necessitates a container for storing it, lest the ink simply spill throughout the printer.”
(Dkt. 70 at 15 (citation omitted).) Thus, Plaintiff argued that “the term here alleged to
lack antecedent basis is a component so fundamental to the operation of a printer that it

1 is inherent, meaning that proper antecedent basis is unnecessary.” (*Id.* at 15–16 (citation
2 omitted).) Finally, Plaintiff argued that, contrary to Defendant’s assertion, the
3 specification does not disclose a machine with multiple ink containers but rather
4 discloses multiple machines that each has an ink container. (*Id.* at 16.)

5 Defendant responded that “it is not reasonably certain whether ‘the ink container’
6 is a specific element of the claimed apparatus, or just any ink container.” (Dkt. 69 at 14–
7 15.)

8 In the Tentative R&R, the Special Master tentatively construed this term as
9 follows: “an ink container.”

10 At the April 17, 2023 hearing, the parties reached agreement that this term should
11 be construed to have its plain meaning so long as the Special Master also sets forth an
12 explicit finding regarding antecedent basis.

13 A connection to an ink container is implicit in the recitals of using ink jet nozzles
14 to apply droplets of ink to a substrate. *Cf. Bose*, 274 F.3d at 1359. Also, an ink
15 container is illustrated schematically in Figure 1 of the ’031 Patent, thus providing
16 additional context for a person of ordinary skill in the art to understand the reference to
17 “the ink container” in the claim. *See* ’031 Patent at 3:21–23 (“The apparatus of FIG. 1 is
18 a printing device for depositing ink from ink container 36 onto the surface of substrate
19 23 independently of the viscosity of the ink.”); *see also id.* at 3:66–4:4. The claims are
20 reasonably clear that the phrase “the ink container” merely requires some ink container.

1 That is, this term does not impose any requirement as to the location of the ink container,
2 provided that the other claim limitations are met. The *Cellular Communications* case
3 cited by Defendant does not compel otherwise. See *Cellular Commc'ns Equip. LLC v.*
4 *AT&T, Inc.*, No. 2:15-CV-576-RWS-RSP, 2016 WL 7364266, at *8 (E.D. Tex. Dec. 19,
5 2016) (finding “the apparatus” indefinite for lack of antecedent basis, noting “the claims
6 do not specify whether ‘the apparatus’ is an apparatus that is performing the recited
7 method”). Here, unlike in *Cellular Communications*, a connection to an ink container is
8 implicit in the recitals of using ink jet nozzles to apply droplets of ink to a substrate.
9 Finally, the potential for using multiple ink containers does not give rise to any lack of
10 reasonable certainty because the claims here at issue each require only one ink container.

11 The Special Master therefore hereby expressly finds that no antecedent basis is
12 necessary because an ink container is inherent in the recital of ink flowing to an ink jet
13 nozzle arrangement, and the Special Master therefore hereby construes **“the ink**
14 **container”** to have its **plain meaning**.

10. “temperature of the droplets as the ink flows from the ink container to the nozzle”

“temperature of the droplets as the ink flows from the ink container to the nozzle” (’031 Patent, Claim 12)	
Plaintiff MGI’s Proposal	Defendant Duplo’s Proposal
This term has its plain and ordinary meaning requiring no construction and is neither indefinite under 35 U.S.C. § 112(2) nor a means-plus-function claim under 35 U.S.C. § 112(6).	Indefinite

(Dkt. 60, Ex. 1 at 7; Dkt. 62 at 15.)

In the Tentative R&R, the Special Master tentatively construed this term as follows: “plain meaning.”

(a) The Parties’ Positions

Plaintiff argues: “[D]uring the parties meet and confer[, Defendant] contended that the droplets could not have a temperature as the ink flows because the ink was not yet in the shape of droplets. Duplo’s contention is without merit. Droplets are just ink in a certain shape. Temperature, like viscosity, is a property of the ink, the material, not the shape it takes when formed into droplets” (Dkt. 61 at 21.)

Defendant argues that whereas “[i]nk droplets refer (in the patent specification) to the form of the ink after it leaves a nozzle,” “[t]his term however refers to ink at a time

1 before it leaves the nozzles” (Dkt. 62 at 15 (citation omitted).) Defendant argues
2 that “[i]t does not make sense for ink droplets to flow from the ink container to the
3 nozzle, and thus the term should be found indefinite.” (*Id.* (citing *Horizon Pharma, Inc.*
4 *v. Reddy’s Labs. Inc.*, No. 2019-1607, 839 Fed. Appx. 500, 505 (Fed. Cir. Jan. 6, 2021)
5 (“One circumstance in which claims are indefinite is where the claims, as properly
6 construed, are nonsensical.”)).)

7 Plaintiff responds that “Duplo admits it understands that the temperature being
8 measured is the temperature of ink,” and so “Duplo’s own argument shows that this
9 claim is reasonably certain and is not indefinite.” (Dkt. 70 at 16.)

10 Defendant responds that “[b]ased on the Opening Briefs and the intrinsic
11 evidence, and in the interest of narrowing claim construction disputes, Defendant offered
12 a compromise proposal . . . to MGI,” namely “temperature of the ink as detected by a
13 temperature detector positioned between the ink container and the nozzle in the flow
14 path of the ink.” (Dkt. 69 at 15.)

15 At the April 17, 2023 hearing, the parties presented oral arguments.

16 (b) Analysis

17 Claim 12 of the ’031 Patent recites (emphasis added):

18 12. Apparatus for applying a coating of covering ink to a substrate,
19 comprising a transport mechanism for causing relative movement between
20 the substrate and an ink jet nozzle arrangement, the ink jet nozzle
arrangement having a piezoelectric actuator for applying droplets of
covering ink to the substrate; a computer controlling a heater included in the
nozzle arrangement heating the covering ink and an electric source for

1 applying an electric waveform to the piezoelectric actuator, said waveform
2 controlling the shapes of the droplets, said electric waveform having a
3 shape determined by at least one of the viscosity and/or the *temperature* of
4 the covering ink, the apparatus further including at least one detector
upstream from the heater for detecting the viscosity of the ink and/or a
detector for detecting *temperature of the ink droplets as the ink flows from
the ink container to the nozzle.*

5 Defendant argues that this term is internally inconsistent because the “droplets” do
6 not exist “as the ink flows from the ink container to the nozzle.” Instead, Defendant
7 submits, “droplets” are formed as ink is being ejected from the nozzle, which occurs
8 only after the ink flows from the ink container to the nozzle.

9 A reasonable reading of the claim as a whole, however, is that the recited detector
10 is for detecting temperature of the ink that is flowing from the ink container to the nozzle
11 and that will become droplets when it is ejected from the nozzle. The Special Master
12 therefore hereby expressly rejects Defendant’s indefiniteness argument.

13 In its responsive claim construction brief, Defendant alternatively proposes the
14 following construction: “‘temperature of the ink as detected by a temperature detector
15 positioned between the ink container and the nozzle in the flow path of the ink’ (as
16 described in []’031 file history, 03/18/13 Office Action response, at 10, at MGI_000451
17 (Dkt. 62, Ex. 10)).” (Dkt. 69 at 15.)

18 At the April 17, 2023 hearing, Defendant explained that its alternative proposal
19 refers to the recital of “a detector for detecting temperature,” but the ensuing discussion
20 demonstrated an underlying dispute as to whether the detector must be in contact with

1 the flowing ink or at least must be in contact with whatever structure contains the
2 flowing ink. Defendant has not demonstrated that this is warranted, even when
3 considering prosecution history in which the patentee stated “in the present application
4 . . . the temperature detector is *positioned* between the ink container and the nozzle *in the*
5 *flow path* of the ink.” (Dkt. 62, Ex. 10, Mar. 18, 2013 Amendment Under 37 C.F.R.
6 §1.114 at 10 (MGI_000451) (emphasis added).)¹ Defendant does not persuasively show
7 that being “positioned . . . in the flow path” necessarily requires any physical contact so
8 as to exclude, for example, sensing temperature at a distance such as by an infrared
9 detector. *See Omega Eng’g Inc. v. Raytek Corp.*, 334 F.3d 1314, 1324 (Fed. Cir. 2003)
10 (“prosecution disclaimer promotes the public notice function of the intrinsic evidence
11 and protects the public’s reliance on *definitive* statements made during prosecution”)
12 (emphasis added); *see also id.* at 1325–26 (“for prosecution disclaimer to attach, our
13 precedent requires that the alleged disavowing actions or statements made during
14 prosecution be both *clear and unmistakable*”) (emphasis added); *Every Penny Counts,*
15 *Inc. v. Am. Express Co.*, 563 F.3d 1378, 1383–84 (Fed. Cir. 2009) (permissible to
16 consider hypotheticals during claim construction).

17
18 ¹ Also of note, although Defendant cited this prosecution history document in its
19 responsive claim construction brief (Dkt. 69 at 15) and attached this prosecution history
20 document as an exhibit to its opening brief (Dkt. 62, Ex. 10; *see* Dkt. 62 at 13
(discussing Ex. 10 as to the term “nozzle arrangement”)), Defendant did not present
any discussion of the “positioned . . . in the flow path of the ink” statement by the
examiner until the April 17, 2023 hearing.

1 The Special Master therefore hereby expressly rejects Defendant’s alternative
2 proposed construction. To be clear, although Defendant’s alternative proposal is
3 rejected, and although this claim limitation does *not* require the detector to be in physical
4 contact with the flowing ink or in physical contact with whatever structure contains the
5 flowing ink, this claim limitation *does* require a detector for detecting temperature of the
6 ink that is flowing (rather than, for example, temperature of ink that is being held in an
7 ink container upstream from the ink that is flowing).

8 With that understanding, and to avoid any confusion about the reference to
9 “droplets” in this term, the Special Master hereby construes **“temperature of the**
10 **droplets as the ink flows from the ink container to the nozzle”** to mean
11 **“temperature of the ink that is flowing from the ink container to the nozzle.”**

11. “the intermediate value having an amplitude and/or duration to dependent on the viscosity of the ink droplet” and “the intermediate value having an amplitude and/or duration dependent on the viscosity of the ink droplet”

“the intermediate value having an amplitude and/or duration to dependent on the viscosity of the ink droplet”

(’031 Patent, Claims 7, 18)

“the intermediate value having an amplitude and/or duration dependent on the viscosity of the ink droplet”

(’806 Patent, Claims 4, 12, 22, 31)

Plaintiff MGI’s Proposal

Defendant Duplo’s Proposal

This term has its plain and ordinary meaning requiring no construction and is neither indefinite under 35 U.S.C. § 112(2) nor a means-plus-function claim under 35 U.S.C. § 112(6).

Indefinite

(Dkt. 60, Ex. 1 at 4–5; Dkt. 62 at 16.)

Claim 7 of the ’031 Patent, for example, recites (emphasis added):

7. The method of claim 1 wherein the waveform has (a) neutral value associated with the nozzle arrangement being at rest, (b) a first polarity relative to the neutral value for causing the nozzle arrangement to have a volume greater than the neutral value, and (c) a second polarity relative to the neutral value for causing the nozzle arrangement to have a volume less than the neutral value; the waveform first polarity having *an intermediate substantially constant* amplitude between the neutral value and a peak value, each peak value causing a droplet to be expelled from the nozzle arrangement, *the intermediate value having an amplitude and/or duration to [sic] dependent on the viscosity of the ink droplet.*

1 Plaintiff argued that “[t]he specification with reference to FIG. 2 discusses this
2 element,” “[t]he specification further explains that the waveform may include an
3 intermediate plateau 94 that ‘enables the ink to be prepared for ejection before the actual
4 expulsion during plateau 86,’” and “[t]he specification explains that the intermediate
5 plateau has an amplitude and/or duration dependent on the ink viscosity.” (Dkt. 61 at 22
6 (citing ’031 Patent at 5:51–7:14).)

7 Defendant argued that the term “the intermediate value” lacks antecedent basis,
8 and “[t]he claims discuss a ‘first polarity’ and ‘the intermediate value’ without providing
9 a clear distinction between these.” (Dkt. 62 at 16.) Defendant also argued that
10 “[w]ithout proper antecedent basis, a person of ordinary skill in the art would not be able
11 to ascertain with reasonable certainty what ‘the intermediate value’ refers to and
12 whether, similar to the first polarity, its amplitude is substantially constant,” and “[t]he
13 specification does not aid in understanding the proper scope of these claims as the term
14 ‘intermediate value’ does not appear in the specification.” (*Id.*)

15 Plaintiff responded that “a waveform is a continuous function of varying
16 amplitude, with ‘polarity’ denoting a positive or negative value away from a central
17 value,” and “[t]he existence of a peak and an intermediate value between the neutral
18 value and the peak is an inherent property of any wave form, reflected in the mean value
19 theorem of basic calculus.” (Dkt. 70 at 17.) Further, Plaintiff argued: “Defendant’s
20 assertion that the patent does not distinguish between ‘first polarity’ and ‘intermediate

1 value' is wrong. The 'first polarity' is the part of waveform above the neutral value 84 in
2 Fig. 2 and 'intermediate value' is the plateau 94 depicted in Fig. 2." (*Id.*)

3 Defendant responded that "[b]ased on the Opening Briefs and the intrinsic
4 evidence, and in the interest of narrowing claim construction disputes, Defendant offered
5 a compromise proposal . . . to MGI," namely "the antecedent for 'the intermediate value'
6 is 'an intermediate substantially constant amplitude between the neutral value and a peak
7 value.'" (Dkt. 69 at 16.)

8 In the Tentative R&R, the Special Master tentatively construed this term as
9 follows: "the antecedent basis for 'the intermediate value' is 'an intermediate
10 substantially constant amplitude.'"

11 At the April 17, 2023 hearing, the parties reached agreement that this term should
12 be construed to have its plain meaning so long as the Special Master also sets forth an
13 explicit finding regarding the antecedent basis for this term.

14 On the face of this claim, the phrase "the intermediate value" has antecedent basis
15 in the recital of "the waveform first polarity having an *intermediate substantially*
16 *constant amplitude* between the neutral *value* and a peak *value*." In other words, "the
17 intermediate value" refers back to the recital of "an intermediate substantially constant
18 amplitude." This is likewise true in the other claims here at issue, namely Claim 18 of
19 the '031 Patent and Claims 4, 12, 22, and 31 of the '806 Patent.

1 The specification is consistent with this reading, disclosing an “intermediate
2 plateau 94” (also referred to as “plateau 94”) that “enables the ink to be prepared for
3 ejection before the actual expulsion during plateau 86.” ’031 Patent at 6:22–29; *see id.*
4 at 6:20–22 (“intermediate amplitude at plateau 94”). The specification further discloses
5 that, as recited in the claim, the amplitude and/or duration of the intermediate plateau can
6 depend on the viscosity of the ink. *Id.* at 6:29–34 (“The voltage amplitude and duration
7 of plateau 94 depend on the viscosity of the ink so that increases in viscosity are
8 accompanied by increases in voltage amplitude and duration of plateaus 94.”).

9 The Special Master therefore hereby expressly finds that **the antecedent basis for**
10 **“the intermediate value” is “an intermediate substantially constant amplitude,”** and
11 with that understanding the Special Master hereby construes **“the intermediate value**
12 **having an amplitude and/or duration to dependent on the viscosity of the ink**
13 **droplet”** and **“the intermediate value having an amplitude and/or duration**
14 **dependent on the viscosity of the ink droplet”** to have their **plain meaning.**

12. “said shape”

“said shape” (’806 Patent, Claim 1)	
Plaintiff MGI’s Proposal	Defendant Duplo’s Proposal
This term has its plain and ordinary meaning requiring no construction and is neither indefinite under 35 U.S.C. § 112(2) nor a means-plus-function claim under 35 U.S.C. § 112(6).	Indefinite

(Dkt. 60, Ex. 1 at 10; Dkt. 62 at 17)

Claim 1 of the ’806 Patent recites (emphasis added):

1. A method of applying a coating of covering ink to a substrate moving relative to an ink jet nozzle arrangement having a piezoelectric actuator for applying droplets of covering ink to the substrate, the method comprising controlling by a computer *the shapes of the droplets* by controlling *the shape of an electric waveform* applied to the piezoelectric actuator, *said shape* being controlled by selecting at least a number of plateaus of the electric waveform, in response to at least one of the following parameters: viscosity of the ink, composition of the covering ink, temperature of the covering ink, temperature of the substrate, desired thickness of the layer, type of substrate surface to which the droplets are applied, and relative speed of the substrate and the ink jet nozzle arrangement.

The specification discloses, for example, that “[t]he shape of the voltage wave and the droplet depend on the waveform information stored in memory” and “CPU 52 monitors and adjusts the values and durations of the different plateaus of the wave that source 80 derives and therefore of the shape of the ink droplet depending on at least one

1 printing parameter.” ’806 Patent at 5:44–46 & 6:50–54; *see id.* at 6:50–65 (“The outputs
2 of one or more of detectors 58, 60, 62 and 64 can be supplied to interface 54 to provide
3 partial or completely automatic control of the shape of the wave that source 80
4 derives.”).

5 Plaintiff argued that, read in light of the claim language and as confirmed by the
6 specification, “[t]he term ‘said shape’ refers to ‘the shape of an electric waveform.’”
7 (Dkt. 61 at 22–23.)

8 Defendant argued that “[t]here are multiple antecedents for the term ‘said shape,’
9 and there is not sufficient guidance on what is the proper antecedent for ‘said shape,’”
10 and “it is ambiguous as to whether the claim term ‘said shape’ refers to ‘the shapes of the
11 droplets,’ or ‘the shape of an electric waveform,’ or both.” (Dkt. 62 at 17 & 18 (citation
12 omitted).)

13 Plaintiff responded that “‘said shape’ can only refer to ‘shape of an electric
14 waveform’ because that is the only prior term using the singular noun ‘shape,’ and there
15 is no confusion as to the antecedent basis of ‘said shape.’” (Dkt. 70 at 18.)

16 Defendant responded that Plaintiff’s attempted distinction between singular and
17 plural is unavailing because a singular noun encompasses the plural for claim
18 construction purposes,” and “the specification seems to suggest both shapes are
19 controlled by selecting at least a number of plateaus of the electric waveform,” and “[a]t
20 other times, it seems to suggest that the computer controls the shape of a droplet by

1 controlling the number of plateaus.” (Dkt. 69 at 16 (citations and internal quotation
2 marks omitted).)

3 In the Tentative R&R, the Special Master tentatively construed this term as
4 follows: “the antecedent basis for ‘said shape’ is ‘the shape of an electric waveform.’”

5 At the April 17, 2023 hearing, the parties reached agreement that this term should
6 be construed to have its plain meaning so long as the Special Master also sets forth an
7 explicit finding regarding the antecedent basis for this term.

8 On the face of this claim, the term “said shape” refers back to “the shape of an
9 electric waveform” because “said shape” is singular and “the shape of an electric
10 waveform” is singular. The phrase “the shapes of the droplets,” by contrast, is plural. A
11 fair reading of the claim as a whole, therefore, is that “said shape” refers back to “the
12 shape of an electric waveform.” This understanding is also consistent with the
13 subsequent recital that “said shape” is “controlled by selecting at least a number of
14 plateaus of the electric waveform.” Further, this is consistent with the specification,
15 wherein the Summary of the Invention states: “The method comprises controlling the
16 shapes of the droplets by controlling the shape of an electric waveform applied to the
17 piezoelectric actuator. *The shape of the electric waveform* is controlled in response to at
18 least one of the following parameters:” ’806 Patent at 1:67–2:4 (emphasis added).
19 The meaning of “said shape” is thus reasonably clear.

Defendant cites *Sensor Electronic*, which found that “the material” lacked clear antecedent basis because the claim recited not only “a first layer composed of a material” but also “a second layer composed of a material.” See *Sensor Elec. Tech., Inc. v. Bolb, Inc.*, No. 18-CV-05194-LHK, 2019 WL 4645338, at *31 (N.D. Cal. Sept. 24, 2019). In light of the above-discussed context provided by surrounding claim language, as further confirmed by the specification, *Sensor Electronic* is distinguishable on its facts.

The Special Master therefore hereby expressly finds that **the antecedent basis for “said shape” is “the shape of an electric waveform,”** and with that understanding the Special Master hereby construes “said shape” to have its **plain meaning**.

13. “in response to at least one of the following parameters”

“in response to at least one of the following parameters” (’806 Patent, Claims 1, 9, 19, 28)	
Plaintiff MGI’s Proposal	Defendant Duplo’s Proposal
This term has its plain and ordinary meaning requiring no construction and is neither indefinite under 35 U.S.C. § 112(2) nor a means-plus-function claim under 35 U.S.C. § 112(6).	“in response to” occurs during the operation

(Dkt. 60, Ex. 1 at 11; Dkt. 62 at 18.)

In the Tentative R&R, the Special Master tentatively construed this term as follows: “plain meaning.”

1 (a) The Parties' Positions

2 Plaintiff argues that “Duplo’s proposed construction that “‘in response to” occurs
3 during operation’ is contrary to law both for importing extraneous limitations into the
4 claim and imposing a specific sequence limitation where none exists.” (Dkt. 61 at 23.)

5 Defendant argues that “Defendant’s proposed construction seeks to clarify the
6 claim to be consistent with a core feature of the alleged invention that this limitation
7 reflects—a computer collecting information and controlling an electric waveform based
8 on that information.” (Dkt. 62 at 18 (citing ’806 Patent at 3:26–43 & 6:50–55).)

9 Plaintiff responds that “Duplo is . . . reading limitations into a claim that are not
10 present in the claim language,” and “Duplo points to several sections of the specification
11 to support its construction, but these sections do not even show a system operating as its
12 construction presumes.” (Dkt. 70 at 18.) Plaintiff argues that nothing cited by
13 Defendant requires the monitoring and adjusting to occur all during a single operation.
14 (*Id.* at 19.)

15 Defendant responds that “[t]he claims, specification, and prosecution history
16 demonstrate that ‘controlling . . . in response to . . .’ occurs during operation of the
17 device,” and “[t]he computer controls the shapes of the drops, in response to getting
18 information from the sensors/detectors, which logically takes place during operation, in a
19 cause-and-effect manner.” (Dkt. 69 at 17–18.)

20 At the April 17, 2023 hearing, the parties presented oral arguments.

1 (b) Analysis

2 Claim 1 of the '806 Patent recites (emphasis added):

3 1. A method of applying a coating of covering ink to a substrate moving
4 relative to an ink jet nozzle arrangement having a piezoelectric actuator for
5 applying droplets of covering ink to the substrate, the method comprising
6 controlling by a computer the shapes of the droplets by controlling the
7 shape of an electric waveform applied to the piezoelectric actuator, said
8 shape being controlled by selecting at least a number of plateaus of the
9 electric waveform, *in response to at least one of the following parameters*:
10 viscosity of the ink, composition of the covering ink, temperature of the
11 covering ink, temperature of the substrate, desired thickness of the layer,
12 type of substrate surface to which the droplets are applied, and relative
13 speed of the substrate and the ink jet nozzle arrangement.

14 Defendant cites authority that “in response to” requires “a cause-and-effect
15 relationship.” *Am. Calcar, Inc. v. Am. Honda Motor Co. Inc.*, 651 F.3d 1318, 1340 (Fed.
16 Cir. 2011). Defendant also cites the following disclosures in the specification, arguing
17 that the claim language and the specification support finding that the term “in response
18 to at least one of the following parameters” refers to parameter values obtained during
19 operation:

20 The printing device is controlled by computer 50 which controls different
 work stations and collects information from various sensors. These sensors,
 for example, provide information about the position of the substrates,
 information about the configuration of the substrates and validation
 information indicating whether an operation was properly or improperly
 performed, as well as conditions (particularly viscosity and temperature) of
 the ink. Computer 50 includes CPU 52 having interface 54 responsive to
 (1) key board 56 and (2) sensors 58 and 60 for the viscosity and temperature
 of the varnish flowing from container 36, respectively, as well as sensors 62
 and 64 for the temperature and forward speed of substrate 23, respectively.
 Computer 50 also includes memory 66 which responds to signals gathered

1 by interface 54 to derive various control signals that are supplied to the
2 CPU, thence via interface 54 to various actuators and controllers.

3 * * *

4 Each of the ink-jet nozzles of array 46 is electro-acoustically driven by a
5 piezoelectric actuator of array 47. The piezoelectric actuators are activated
6 by a particular electric waveshape derived by electric source 80, in turn
7 responsive to an output of interface 54 which indicates the shape of a
8 voltage wave that source 80 applies to the piezoelectric actuators. The shape
9 of the voltage wave and the droplet depend on the waveform information
10 stored in memory 66 which is read out to electric source 80 in response to at
11 least one of the following parameters: viscosity of the ink droplets,
12 temperature of the ink droplets, temperature of the substrate, desired
13 thickness of the layer, type of substrate surface to which the droplets are
14 applied, temperature of the substrate, and relative speed of the substrate and
15 the ink jet nozzle array.

16 * * *

17 As ink temperature increases the inks usually become less viscous, so that
18 the data stored in memory 66 are such that as ink temperature increases
19 there are decreases in the amplitude and/or duration of plateaus 86.

20 * * *

CPU 52 *monitors and adjusts* the values and durations of the different
plateaus of the wave that source 80 derives and therefore of the shape of the
ink droplet depending on at least one printing parameter, for example a
characteristic of the substrate or of the ink intended to be deposited on the
substrate surface.

'806 Patent at 3:26–42, 5:39–52, 6:16–19 & 6:50–55 (emphasis added).

But although these disclosures demonstrate that parameter values could be
obtained during operation, no such limitation appears in the claim language, and

1 Defendants do not show any definition or disclaimer that would warrant precluding some
2 or all of the parameter values from being obtained in advance of operation.

3 Finally, Defendant cites prosecution history in which the patentee stated that the
4 “Kono” reference “fails to disclose or suggest the control of shape of the electric
5 waveform applied to the piezoelectric actuator and fails to teach or suggest the various
6 memory information and various sensors or detectors taught by the present application
7 and claimed by the claimed subject matter.” (Dkt. 61, Ex. 5, July 5, 2012 Office Action
8 Response at 13 (MGI_000418).) The patentee also argued that the “Asano” reference
9 did not “disclose a method controlling the shape of an electric waveform . . . in response
10 to the viscosity of the covering ink being detected as the ink flows from the ink container
11 to the nozzle and upstream from the heater. (Dkt. 62, Ex. 10, Mar. 18, 2013 Amendment
12 Under 37 C.F.R. §1.114 at 10 (MGI_000451).)

13 These statements by the patentee, however, contain no definition or disclaimer
14 that would preclude some or all of the recited parameter values from being obtained, for
15 example, in advance of performing the steps of the recited method. *See Omega Eng’g*,
16 334 F.3d at 1324, 1325–26. Finally, the word “operation” does not appear in the claims
17 here at issue, and Defendant’s proposal of referring to “the operation” is unclear and
18 would tend for give rise to an additional dispute regarding the construction and thus
19 would tend to confuse rather than clarify the scope of the claims.
20

1 At the April 17, 2023 hearing, Defendant submitted that it is not attempting to
2 limit this term to a single “operation,” but Defendant reiterated that “in response to”
3 requires a cause-and-effect relationship that is directly responsive to information that is
4 gathered while the recited method is being performed. Defendant argued that using, for
5 example, a configuration file that specifies all of the parameters would not meet this
6 claim limitation.

7 Defendant’s arguments are unpersuasive. In particular, a natural reading of the
8 recital of a “desired thickness of the layer,” as one of the parameters listed in the claim,
9 is that this parameter, and potentially others, could be specified in advance of the recited
10 method being performed. This is also consistent with disclosure that certain values may
11 be “predetermined” and entered by an operator via keyboard. ’806 Patent at 6:66–7:3;
12 *see id.* at 6:50–7:3.

13 The Special Master therefore hereby expressly rejects Defendant’s proposed
14 construction, and no further construction is necessary. *See U.S. Surgical*, 103 F.3d
15 at 1568; *see also O2 Micro*, 521 F.3d at 1362; *Finjan*, 626 F.3d at 1207; *Bayer*, 989 F.3d
16 at 977–79.

17 The Special Master accordingly hereby construes **“in response to at least one of**
18 **the following parameters”** to have its **plain meaning**.
19
20

VII. DISPUTED TERMS IN U.S. PATENT NO. 9,422,449

14. “oligomer”

“oligomer” (’449 Patent, Claim 1)	
Plaintiff MGI’s Proposal	Defendant Duplo’s Proposal
This term has its plain and ordinary meaning requiring no construction and is neither indefinite under 35 U.S.C. § 112(2) nor a means-plus-function claim under 35 U.S.C. § 112(6).	Indefinite

(Dkt. 60, Ex. 1 at 33; Dkt. 62 at 19.)

In the Tentative R&R, the Special Master tentatively construed this term as follows: “plain meaning.”

(a) The Parties’ Positions

Plaintiff submits that “[t]he ’449 patent distinguishes between two types of compounds (monomers and oligomers) and recites a weight ratio between them,” and “[t]hese are ordinary, commonly used terms are [sic] well-understood by those of ordinary skill in the art, and here have their plain an[d] ordinary meaning.” (Dkt. 61 at 24.) Plaintiff also argues that “the plain and ordinary meaning of oligomer is a molecule made of monomers,” and “[i]f there were any confusion about what an ‘oligomer’ is (and there is not), the specification recites by established trade names more

1 than a dozen commercially available examples.” (*Id.* (citing ’449 Patent at 3:63–66 &
2 4:31–64).) Further, Plaintiff cites an extrinsic dictionary definition of “oligomer.”
3 (Dkt. 61 at 24.)

4 Defendant argues that “[a]n oligomer, generally, is understood in the art to be a
5 molecule made up of a few monomer units,” but “there is no objective boundary for how
6 many monomer units that few monomer units is in the context of the ’449 patent.”
7 (Dkt. 62 at 19–20 (citations omitted).) Defendant argues: “The intrinsic record does not
8 help in providing sufficient objective criteria for evaluating the scope of the term
9 ‘oligomer.’ It fails to provide clues, such as a value or a range for molecular weight of
10 the claimed ‘oligomer,’ to allow a person of ordinary skill in the art to infer the number
11 of monomer units that fall within the scope of the claimed ‘oligomer.’” (Dkt. 62 at 20.)
12 Further, Defendant argues that “MGI’s proposed construction that ‘an oligomer is a
13 molecule made of monomers’ reflects the indefiniteness of this term—it makes the
14 number of monomers unbounded, contrary to a person of ordinary skill’s understanding
15 that a monomer is made up of a small number or a few monomers.” (*Id.* (citations
16 omitted).)

17 Plaintiff responds that even if this is deemed to be a term of degree, “terms of
18 degree or approximation do not render a claim indefinite,” and “[f]or ‘objective
19 boundaries,’ the intrinsic record including the patent specification and prosecution
20 history provides numerous examples demonstrating what ‘oligomer’ means—examples

1 which Duplo’s witness simply ignores.” (Dkt. 70 at 20.) Plaintiff argues that the claims,
2 the specification, and the prosecution history all demonstrate that a person of ordinary
3 skill in the art would understand the term. (*Id.* at 21.)

4 Defendant responds that technical dictionary definitions, including one cited by
5 Plaintiff, define “oligomer” not just as being a molecule made of monomers but rather as
6 consisting of *only a small number* of monomers. (Dkt. 69 at 21.) Defendant also argues
7 that the examples in the specification cited by Plaintiff are insufficient “because they do
8 not indicate a range for the number of monomer units within a molecule to aid a person
9 of ordinary skill in the art in determining the scope of the claimed ‘oligomer.’” (*Id.*
10 at 21–22 (citation omitted).)

11 At the April 17, 2023 hearing, the parties rested on their briefs and presented no
12 oral arguments as to this disputed term.

13 (b) Analysis

14 Defendant submits extrinsic technical dictionaries that define “oligomer” as “[a]
15 polymer molecule consisting of only a few units (dimer, trimer, tetramer).” (Dkt. 62,
16 Ex. 15, *Hawley’s Condensed Chemical Dictionary* 855 (11th ed. 1987)
17 (DUPLOUSA0011862).) Both sides also cite a biology dictionary that defines
18 “monomer” as “any molecule that can exist alone or with other similar molecules to
19 form a polymer” and that defines “oligomer” as “a molecule consisting of only a small
20

1 number of monomers.” (*Id.*, Ex. 16, *Collins Dictionary of Biology* 347 (3d ed. 2003)
2 (MGI_002466); Dkt. 61, Ex. 12 (same).)

3 The parties appear to agree that the term “oligomer” refers to a molecule made up
4 of a small number of monomers. The parties dispute whether this is a term of degree
5 that lacks sufficient objective boundaries and is therefore indefinite.

6 Plaintiff argues that “oligomer” is not indefinite because “oligomer” is a known
7 term in the relevant art and also because the patent sets forth examples. As a threshold
8 matter, Plaintiff also relies on the absence of an indefiniteness rejection during
9 prosecution (Dkt. 61 at 24), but this is unpersuasive because this is already accounted for
10 by the presumption of validity under 35 U.S.C. § 282.

11 Turning to the claim language, Claim 1 of the ’449 Patent recites (emphasis
12 added):

13 1. A varnish configured to coat a surface of a substrate and to be deposited
14 by inkjet, the composition of the varnish at least comprising:

15 *at least one hardenable oligomer;*

16 a hardenable monomer, at least one hardenable monomer contained
17 in the composition being selected from a group formed by alkoxyated
18 and/or poly-alkoxyated acrylic monomers having one or more di- or tri-
19 acrylates; and

20 a photoinitiator;

wherein

the varnish has a surface tension between 19 and 35 mN/m at
25° C.,

*said at least one hardenable oligomer comprises epoxy resin,
alone or in combination with at least one another [sic]
oligomer selected from among polyesters and/or hexa-
functional aliphatic urethane acrylates, and*

1 the varnish has a weight ratio between total hardenable
2 *oligomer* and total hardenable monomer higher than 1:6 and
3 lower than 1:2 while said hardenable oligomer has a
4 viscosity greater than 1 Pa·s at 23° C.,
5 such that the varnish has a viscosity between 5 and 40 mPa·s at
6 25° C.

7 The claim itself thus recites not only “at least one hardenable oligomer” but also
8 explicitly requires that “said at least one hardenable oligomer” is: (a) epoxy resin;
9 (b) epoxy resin in combination with a polyester; (c) epoxy resin in combination with a
10 hex-functional aliphatic urethane acrylate; or (d) epoxy resin in combination with a
11 polyester and a hex-functional aliphatic urethane acrylate.

12 The specification sets forth additional detail regarding oligomers:

13 According to the present invention, at least one hardenable oligomer is
14 selected from among polyesters preferably hexa-functional and/or hexa-
15 functional aliphatic urethane acrylates and/or epoxy resins. This or these
16 particular hardenable oligomers represent at least 75 weight % of the total
17 weight of hardenable oligomers, preferably at least 95% of the total weight
18 of the hardenable oligomers or even the entirety of the hardenable
19 oligomers in the composition of the varnish of the present invention.

20 * * *

 Depending on the type of varnish it is sought to produce, i.e. depending on
 the type of desired physical characteristics of the substrate to be coated, the
 choice of hardenable oligomer may change. However, the viscosity of the
 hardenable oligomer is preferably between 5 and 70 Pas, even more
 preferably between 20 and 60 Pa·s at 25° C. For example but not limited
 thereto, if it is sought to obtain a varnish having extensive reactivity that is
 scratch-resistant and solvent-resistant, the choice of oligomer will turn to a
 polyester acrylate, preferably a hexa-functional polyester acrylate e.g. a
 hexa-functional polyester acrylate commonly available under the trade
 name EBECRYL 870. As examples, mention can also be made of the
 polyester acrylates CN2295, CN291, CN293 and Ebecryl 830. The poly-

1 ester acrylate can be replaced by or advantageously mixed with the hexa-
2 functional aliphatic urethane acrylate available under the reference
3 EBECRYL 5129. The use of this oligomer will be preferred if greater
4 scratch-resistant and solvent-resistant properties of the varnish are required.
5 As non-limiting examples mention can also be made of the hexa-functional
6 aliphatic urethane acrylates CN9210, CN9215, Ebecryl 8254 and Ebecryl
7 1290. The hardenable oligomer can also be selected from among epoxy
8 resins which are advantageously adapted to the objective(s) of the
9 invention. As examples the following can be cited: Bisphenol-A epoxy
10 diacrylate available under the trade name EBECRYL 605 or CN 104, CN
11 109, EBECRYL 648, EBECRYL 3105 or a mixture of two or more of the
12 aforementioned epoxy oligomers. The use of such oligomers
13 advantageously allows varnishes to be obtained that are resistant to
14 delamination, in particular varnishes including such oligomers have surface
15 tension properties that are particularly high, for example higher than
16 19 mN/m at 25° C.

17 '449 Patent at 3:63–4:4 & 4:31–64.

18 The claim, as well as the specification, thus provide abundant points of reference
19 for a person of ordinary skill in the art to understand how the patentee used the term
20 “oligomer.” The opinions of Defendant’s expert (even if they were not stricken in
Section IV, above) do not compel otherwise. (Dkt. 62, Ex. 13, Feb. 24, 2023 Scott Decl.
at ¶¶ 30–34.) Instead, any remaining dispute pertains to factual issues regarding
infringement rather than any legal issue for claim construction. *See PPG Indus. v.*
Guardian Indus. Corp., 156 F.3d 1351, 1355 (Fed. Cir. 1998) (“after the court has
defined the claim with whatever specificity and precision is warranted by the language of
the claim and the evidence bearing on the proper construction, the task of determining
whether the construed claim reads on the accused product is for the finder of fact”); *see*
also Acumed LLC v. Stryker Corp., 483 F.3d 800, 806 (Fed. Cir. 2007) (“[t]he resolution

1 of some line-drawing problems . . . is properly left to the trier of fact”) (citing *PPG*, 156
2 F.3d at 1355); *Eon Corp. IP Holdings LLC v. Silver Spring Networks, Inc.*, 815 F.3d
3 1314, 1318–19 (Fed. Cir. 2016) (citing *PPG*, 156 F.3d at 1355; citing *Acumed*, 483 F.3d
4 at 806).

5 The *Inguran* case cited by Defendants addressed a different term (“chemically
6 coordinated”) in an unrelated patent and is not analogous to the present dispute. See
7 *Inguran, LLC v. ABS Glob., Inc.*, No. 17-CV-446-WMC, 2019 WL 943515, at *8 (W.D.
8 Wis. Feb. 26, 2019) (“plaintiffs’ construction of the term ‘chemically coordinated’ is
9 defined solely by the patent’s own reference to the goal of lessening stress on cells,
10 leaving even one skilled in the art to decide not only when that goal is reached, but also
11 how to measure it (e.g., by consistent chemical makeup of the sheath fluid among
12 phases, by coordinated adjustments to the chemical makeup in each phase, by cell stress
13 measurements in each phase, or by a stable population of viable cells across all
14 phases”).

15 The Special Master therefore hereby expressly rejects Defendant’s indefiniteness
16 argument. Defendant presents no alternative proposed construction, and no further
17 construction is necessary for the reasons set forth above.

18 The Special Master accordingly hereby construes “**oligomer**” to have its **plain**
19 **meaning**.

15. “adhesion function monomer”

“adhesion function monomer” (’449 Patent, Claim 26)	
Plaintiff MGI’s Proposal	Defendant Duplo’s Proposal
This term has its plain and ordinary meaning requiring no construction and is neither indefinite under 35 U.S.C. § 112(2) nor a means-plus-function claim under 35 U.S.C. § 112(6).	Indefinite

(Dkt. 60, Ex. 1 at 34–35; Dkt. 62 at 21.)

In the Tentative R&R, the Special Master tentatively construed this term as follows: “indefinite.”

(a) The Parties’ Positions

Plaintiff argues that “MGI has also explained the plain and ordinary meaning of ‘adhesion function monomer’ — a monomer is any molecule that can exist alone or with similar molecules to form a polymer and that this monomer must facilitate[] adhesion to the substrate.” (Dkt. 61 at 24–25.)

Defendant argues that “[t]he term ‘adhesion function monomer’ is not a term of art,” but “the claims and the specification discusses its function, which is ensuring adhesion.” (Dkt. 62 at 21.) “The problem is,” Defendant argues, “it is indefinite as to whether a monomer *ensures* adhesion to a substrate; a person of ordinary skill in the art

1 would not be able to recognize whether a monomer falls within the scope of the claims
2 with reasonable certainty.” (*Id.*)

3 Plaintiff responds that “Duplo never contended that the term ‘ensure’ was
4 indefinite where it already appears in the claim, and Duplo never proposed that term
5 for construction.” (Dkt. 70 at 22.) As to the opinion of Defendant’s expert that adhesion
6 (or lack thereof) would vary from substrate to substrate, Plaintiff responds that “[t]hat
7 argument (while wrong on its face), is directed to enablement and not any issue of claim
8 construction currently at bar.” (*Id.* at 23.)

9 Defendant responds that “MGI’s attempt to run away from the ‘ensure’ claim
10 language reflects the indefiniteness of this term.” (Dkt. 69 at 23.) Defendant also argues
11 that even the example that is disclosed as “allow[ing] a considerable improvement in
12 adhesion of the varnish” (’449 Patent at 5:53–55) “is hardly sufficient to inform a
13 POSITA of what the claimed ‘adhesion function monomer’ is that is claimed to
14 ‘ensure[]’ adhesion to the substrate.” (Dkt. 69 at 23 (citations omitted).)

15 At the April 17, 2023 hearing, the parties presented oral arguments.

16 (b) Analysis

17 As a threshold matter, Plaintiff cites the absence of an indefiniteness rejection
18 during prosecution (Dkt. 61 at 25), but this is unpersuasive because this is already
19 accounted for by the presumption of validity under 35 U.S.C. § 282. For the same
20 reason, Plaintiff’s reliance on the examiner’s citation of prior art as purportedly

disclosing adhesion function monomers is not enough to demonstrate definiteness. (See Dkt. 61, Ex. 9, June 25, 2015 Office Action at 13 & 15 (MGI_001646 & MGI_001648).)

Turning to the claim language, Claim 26 of the '449 Patent depends from Claim 8, which in turn depends from Claim 1. Claim 1 is reproduced above as to the term “oligomer.” Claims 8 and 26 recite (emphasis added):

8. The varnish according to claim 1, wherein the hardenable monomers completing the composition of the varnish comprise at least one function monomer which is *adhesion function monomer* to ensure adhesion to the substrate.

26. The varnish according to claim 8, wherein the adhesion function monomer represents 8 to 15 weight % of the varnish.

Claim 8 thus explains that the “adhesion function monomer” is “to ensure adhesion to the substrate.”

The specification further discloses:

Among the other hardenable monomers possibly completing the composition of the varnish, there are function monomer(s) which ensure adhesion to the substrate called “adhesion function monomer” of the varnish in the present description and the following claims. As preferred example mention is made of N-vinylcaprolactam which allows a considerable improvement in adhesion of the varnish on substantially rigid surfaces such as plastics or PVCs (polyvinyl chlorides). The adhesion function monomer may represent 10 to 25 weight % of the varnish, preferably 8 to 15 weight % of the varnish, for example in the order of 10% of the weight of the varnish.

'449 Patent at 5:49–60.

But although the claims and the specification explain that the “adhesion function monomer” has a particular function, this function of “ensur[ing] adhesion to the

1 substrate” depends entirely on the substrate. The present case is therefore analogous to
2 *Halliburton Energy Servs., Inc. v. M-I LLC*, 514 F.3d 1244, 1254 (Fed. Cir. 2008), in
3 which a “fragile gel” limitation (in patents involving oil field drilling fluids) was set
4 forth as being novel but lacked any reasonably clear parameters and involved oil well
5 properties that would necessarily vary from well to well. Much like *Halliburton*, in the
6 present case the properties of the substrate will vary from substrate to substrate and may
7 affect adhesion. Thus, as used in this claim, which is not limited to any particular
8 substrate, the term “adhesion function monomer” lacks reasonable certainty.

9 At the April 17, 2023 hearing, Plaintiff argued that *Halliburton* is inapplicable
10 because, as Plaintiff puts it, in *Halliburton* the “fragile gel” limitation was the whole
11 invention. Plaintiff argued that, here, the “adhesion function monomer” was not novel
12 but rather referred to a well-known class of monomers. Plaintiff argued that Defendant’s
13 arguments regarding monomers behaving differently on different substrates might
14 pertain to enablement, perhaps, but a person of skill in the art knows what monomers
15 will facilitate adhesion with particular types of substrates. Plaintiff submitted that, in
16 any infringement analysis, a person of skill in the art will know what substrate the
17 claimed invention is being used for.

18 Despite Plaintiff’s arguments, the *Halliburton* problem is particularly acute here
19 because, not only is there no evidence that the term “adhesion function monomer” has
20 had any established meaning in the relevant art, the “adhesion” function appears in

1 relation to a “substrate” that has no description or restrictions. That is, Claim 1 is
2 directed to “[a] varnish configured to coat a surface of a substrate” without limiting the
3 properties or material of the substrate in any way, let alone in any way that might
4 provide objective boundaries for how to “ensure adhesion to the substrate” as required
5 by Claim 26 for the “adhesion function monomer.” The disclosure of a particular
6 example in the specification does not avoid this problem because this claim language is
7 not limited to the disclosed “preferred example.” ’449 Patent at 5:49–60 (reproduced
8 above).

9 This *Halliburton* problem is evident on the face of the claim, even without
10 consulting the opinions of Defendant’s expert. (See Dkt. 62, Ex. 13, Feb. 24, 2023 Scott
11 Decl. at ¶¶ 38–39.) The opinions of Defendant’s expert (even if they were not stricken
12 in Section IV, above) would simply provide additional reinforcement for what is already
13 evident from the claims and the specification, namely that adhesion can depend on, for
14 example, properties of the substrate and conditions surrounding application of the ink to
15 the substrate.

16 The Special Master therefore hereby finds that **“adhesion function monomer” in**
17 **Claim 26 of the ’449 Patent is indefinite.**

18 VIII. CONCLUSION

19 For the foregoing reasons, the Special Master construes the disputed terms as set
20 forth above.

1 IT IS SO ORDERED.

2
3 Date:

May 1, 2023

David Keyzer

4 David Keyzer
Special Master