

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

VOICEAGE EVS LLC,

Plaintiff,

v.

HMD GLOBAL OY,

Defendant.

Civil Action No. 19-1945-GBW

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**MEMORANDUM OPINION**

May 14, 2025  
Wilmington, Delaware

GREGORY B. WILLIAMS  
U.S. DISTRICT JUDGE

Pending before the Court is Defendant HMD Global Oy's ("HMD" or "Defendant") Motion for Judgment on the Pleadings (D.I. 181) ("Defendant's Motion"), which has been fully briefed (*see* D.I. 182; D.I. 185; D.I. 187; D.I. 190; D.I. 191).<sup>1</sup> For the reasons set forth below, the Court DENIES Defendant's Motion.

## **I. BACKGROUND**

Plaintiff VoiceAge EVS LLC ("VoiceAge" or "Plaintiff") alleges infringement of U.S. Patent Nos. 8,990,073 ("the '073 patent") and 9,852,741 ("the '741 patent").<sup>2</sup> Specifically, based on the pleadings, Plaintiff has alleged infringement of "at least claims 31 and 36 of the '073 patent" and "at least claims 17 and 20 of the '741 patent." D.I. 1 ¶¶ 120 (first quote), 142 (second quote).<sup>3</sup> After its first Rule 12 challenge (D.I. 7) was denied in January 2021, Defendant brings another Rule 12 challenge. Defendant's Motion contends that the Challenged Claims are directed to ineligible subject matter. *See* D.I. 182 at 1.

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<sup>1</sup> Both sides attempt to use footnotes in their briefing to advance substantive arguments. "The Court will not consider such footnotes, as '[a]rguments in footnotes are forfeited.'" *Game Play Network, Inc. v. Potent Sys., Inc.*, No. CV 23-323-GBW, 2025 WL 26737, at \*1 n.1 (D. Del. Jan. 3, 2025) (alteration in original) (quoting *In Re Novartis Pharms. Corp. v. MSN Pharms. Inc.*, No. 20-MD-2930-RGA, 2024 WL 4723274, at \*4 (D. Del. Nov. 8, 2024)).

<sup>2</sup> The Court will refer to the '073 patent and the '741 patent collectively as the "Challenged Patents."

<sup>3</sup> Plaintiff now alleges that: (a) "HMD has infringed and continues to infringe the following claims of the '073 patent under 35 U.S.C. § 271(a) and § 271(b): 1–3, 6, 10–17, 20, 30–32, 34, 36–39, and 41," and (b) "HMD has infringed and continues to infringe the following claims of the '741 patent 35 U.S.C. § 271(a) and § 271(b): 1, 2, 5–8, 10–15, and 17–26." D.I. 204 at 1. The Court will refer to the preceding claims collectively as the "Challenged Claims or the "Asserted Claims."

## **II. LEGAL STANDARDS**

### **A. Patent Eligible Subject Matter**

35 U.S.C. “§ 101 is a threshold inquiry in *obtaining* patent protection.” *Astellas Pharma, Inc. v. Sandoz Inc.*, 117 F.4th 1371, 1378 n.2 (Fed. Cir. 2024). Patent claims that fail to comply with § 101 are invalid. *See Aatrix Software, Inc. v. Green Shades Software, Inc.*, 890 F.3d 1354, 1356 n.2 (Fed. Cir. 2018) (denying petition for rehearing en banc). “[A] challenge to patent eligibility on § 101 grounds is an affirmative defense to a claim of patent infringement.” *Mobile Acuity Ltd. v. Blippar Ltd.*, 110 F.4th 1280, 1289 (Fed. Cir. 2024). “The burden to prove the ineligibility of any patent claim stays with the patent challenger at all times.” *Id.* at 1291.

With respect to the judicial exceptions to patent eligibility, “[w]e evaluate claims challenged under Section 101 by applying the now-familiar two-step *Alice/Mayo* framework.” *Beteiro, LLC v. DraftKings Inc.*, 104 F.4th 1350, 1355 (Fed. Cir. 2024). “At step one, we consider ‘whether the claims at issue are directed to [a] patent-ineligible concept’ such as an abstract idea.” *Id.* (alteration in original) (quoting *Alice Corp. Pty. v. CLS Bank Int’l*, 573 U.S. 208, 217 (2014)).<sup>4</sup> “If they are, then we proceed to step two, at which ‘we consider the elements of each claim both individually and as an ordered combination to determine whether the additional elements transform the nature of the claim into a patent-eligible application.’” *Id.*

### **B. Motion for Judgment on the Pleadings**

“Under Rule 12(c), ‘a court must accept all of the allegations in the pleadings of the party against whom the motion is addressed as true and draw all reasonable inferences in favor of the

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<sup>4</sup> “As to the abstract idea exception, no single, hard-and-fast rule that automatically outputs an answer in all contexts exists because there are different types of abstract ideas[.]” *In re Killian*, 45 F.4th 1373, 1381-82 (Fed. Cir. 2022).

non-moving party.” *Bibbs v. Trans Union LLC*, 43 F.4th 331, 339 (3d Cir. 2022) (quoting *Allstate Prop. & Cas. Ins. Co. v. Squires*, 667 F.3d 388, 390 (3d Cir. 2012)).

“A court may grant a Rule 12(c) motion ‘if, on the basis of the pleadings, the movant is entitled to judgment as a matter of law.’” *Id.* (quoting *Fed Cetera, LLC v. Nat’l Credit Servs., Inc.*, 938 F.3d 466, 469 n.7 (3d Cir. 2019)). “Judgment will not be granted unless the movant ‘clearly establishes there are no material issues of fact, and he is entitled to judgment as a matter of law.’” *Bedoya v. Am. Eagle Express Inc.*, 914 F.3d 812, 816 n.2 (3d Cir. 2019) (quoting *Sikirica v. Nationwide Ins. Co.*, 416 F.3d 214, 220 (3d Cir. 2005)).

“A plaintiff can survive a Rule 12(c) motion if her complaint contains ‘sufficient factual matter to show that the claim is facially plausible, thus enabling the court to draw the reasonable inference that the defendant is liable for [the] misconduct alleged.’” *Bibbs*, 43 F.4th at 339 (alteration in original) (quoting *Warren Gen. Hosp. v. Amgen Inc.*, 643 F.3d 77, 84 (3d Cir. 2011)).

“A motion for judgment on the pleadings is analyzed under the same standard as a motion to dismiss filed pursuant to Rule 12(b)(6).” *Twin City Fire Ins. Co. v. Glenn O. Hawbaker, Inc.*, 118 F.4th 567, 573-74 (3d Cir. 2024); *see Amdocs (Israel) Ltd. v. Openet Telecom, Inc.*, 841 F.3d 1288, 1293 (Fed. Cir. 2016).

The Federal Circuit “ha[s] repeatedly recognized, ‘it is possible and proper to determine patent eligibility under 35 U.S.C. § 101 on a Rule 12(b)(6) motion.’” *Mobile Acuity*, 110 F.4th at 1289-90 (quoting *Genetic Techs. Ltd. v. Merial L.L.C.*, 818 F.3d 1369, 1373 (Fed. Cir. 2016)). “If patent eligibility is challenged in a motion to dismiss for failure to state a claim pursuant to Rule 12(b)(6), we must apply the well-settled Rule 12(b)(6) standard which is consistently applied in every area of law.” *Aatrix*, 890 F.3d at 1357. “[P]atent eligibility [under § 101] can be determined at the Rule 12(b)(6) stage ... only when there are no factual allegations that, taken as true, prevent

resolving the eligibility question as a matter of law.” *Beteiro*, 104 F.4th at 1355 (some alterations in original) (quoting *Aatrix Software, Inc. v. Green Shades Software, Inc.*, 882 F.3d 1121, 1125 (Fed. Cir. 2018)); see *Realtime Data LLC v. Array Networks Inc.*, 537 F. Supp. 3d 591, 604 (D. Del. 2021) (“When there is no dispute of material fact, § 101 arguments may be resolved at the pleading stage.”).

### III. DISCUSSION

#### A. The Court Finds that Defendant’s Motion is Timely

Defendant’s Motion was filed years after Plaintiff’s Complaint (D.I. 1) was filed and after the deadline for amending pleadings (see D.I. 60) passed. In a cursory footnote,<sup>5</sup> Defendant asserts that its Motion is timely simply because it was “filed ‘early enough not to delay trial.’” D.I. 182 at 2 n.2 (quoting Fed R. Civ. P. 12(c)).<sup>6</sup> As explained below, the Court agrees that Defendant’s Motion is timely.

The Court initially had concerns that Defendant’s Motion violated Paragraph 20(a) of the Scheduling Order, which under the heading “Case Dispositive Motions,” sets forth that “[a]ll case

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<sup>5</sup> “Arguments raised in cursory footnotes are forfeited.” *Realtek Semiconductor Corp. v. Avago Techs. Int’l Sales Pte. Ltd.*, No. CV 24-1235-GBW, D.I. 60 at 16 n.10 (D. Del. Dec. 11, 2024).

<sup>6</sup> “Rule 12(h)(2) provides that a defense of failure to state a claim upon which relief can be granted may also be made by a motion for judgment on the pleadings.” *Turbe v. Gov’t of Virgin Islands*, 938 F.2d 427, 428 (3d Cir. 1991). However, outside this District, “[c]ourts have cast doubt on the validity of Rule 12(c) motions filed after substantial or completed discovery.” *Uzoh v. Walmart Assocs., Inc.*, No. 1-23-CV-00966-JRN, 2024 WL 4919642, at \*2 (W.D. Tex. Oct. 21, 2024) (quoting *Thompson v. Wal-Mart Stores Tex., LLC*, 706 F. Supp. 3d 689, 697 (S.D. Tex. 2023)); see, e.g., *ADYB Engineered For Life, Inc. v. Edan Admin. Servs. Ltd.*, No. CV 19-7800-MKV, 2022 WL 912127, at \*9 (S.D.N.Y. Mar. 28, 2022) (collecting cases); *Sec. & Exch. Comm’n v. Hemp, Inc.*, No. 216CV01413JADPAL, 2018 WL 1220566, at \*2 (D. Nev. Mar. 8, 2018). The First Circuit, for example, has noted that “going through a lengthy period of discovery only to ignore the fruits of the discovery process by focusing single-mindedly on the adequacy of the allegations of the complaint would make little sense in the mine-run of cases.” *Rios-Campbell v. U.S. Dep’t of Com.*, 927 F.3d 21, 26 (1st Cir. 2019).

dispositive motions . . . shall be served and filed on or before July 7, 2023.” D.I. 43 ¶ 20(a); *see Lab. Skin Care, Inc. v. Ltd. Brands, Inc.*, No. CV 06-601-JJF, 2009 U.S. Dist. LEXIS 97749, at \*1-2 (D. Del. Oct. 15, 2009) (denying as untimely motion for judgment on pleading filed after deadline for “case dispositive motions” set forth in scheduling order).<sup>7</sup>

When Defendant’s Motion was filed, the Court had extended the deadline to file summary judgment motions. *See* D.I. 108 at 2; D.I. 179 at 2. The Court had not, however, extended the deadline to file other dispositive motions. As a “§ 101 motion for judgment on the pleadings [is] [a] [] case dispositive motion,”<sup>8</sup> the Court ordered Defendant to identify “the applicable deadline for submitting dispositive Rule 12 motions under the relevant Scheduling Order.” D.I. 199.<sup>9</sup>

According to Defendant, in this instance, “[t]he Scheduling Order does not address or mention motions filed under Rule 12(c).” D.I. 201 at 1. As support, Defendant cites *Ecolab Inc. v. Dubois Chemicals, Inc.*, No. CV 21-567-RGA, 2023 WL 7019266 (D. Del. Oct. 25, 2023), which involved a similar scheduling order provision. *See* D.I. 201 at 1. As discussed below, it is unclear how the *Ecolab* case supports Defendant’s contention.<sup>10</sup>

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<sup>7</sup> In the *Lab. Skin* case, the Court found the movants’ Rule 12(c) motion was untimely under the following scheduling order provision: “Case Dispositive Motions. Any case dispositive motions, pursuant to the Federal Rules of Civil Procedure, shall be served and filed with an opening brief on or before September 10, 2008.” No. CV 06-601-JJF, D.I. 57 ¶ 7 (emphasis removed).

<sup>8</sup> *BroadSoft, Inc. v. CallWave Commc’ns, LLC*, No. CV 13-711-SRF, 2019 WL 3750817, at \*2 n.3 (D. Del. Aug. 8, 2019); *cf. Brit. Telecommunications PLC v. IAC/Interactivecorp*, No. CV 18-366-WCB, D.I. 118 at 2 (D. Del. July 16, 2019) (“Case Dispositive Motions (Other Than Motions Under Rule 12, Fed. R. Civ. P.).”) (quoting scheduling order).

<sup>9</sup> Under Rule 16, with limited provisos, “[t]he scheduling order must limit the time to . . . file motions.” Fed. R. Civ. P. 16(b)(3)(A); *see Gillispie v. City of Miami Twp.*, No. 3:13-CV-416, 2022 WL 13956700, at \*2 (S.D. Ohio Oct. 24, 2022) (denying as untimely motion for judgment on the pleadings filed after scheduling order deadline).

<sup>10</sup> If anything, the *Ecolab* case arguably provides a distinct reason for finding that Defendant’s Motion is untimely. Like the untimely Rule 12(c) motion in the *Ecolab* case, Defendant’s Motion

The movant in the *Ecolab* case filed its Rule 12(c) motion in an omnibus motion that complied with the deadline and page restrictions set forth in the “Case Dispositive Motions” portion of the scheduling order governing that case. *Compare* No. CV 21-567-RGA, D.I. 202 at cover (“Dated: June 9, 2023.”), *with* No. CV 21-567-RGA, D.I. 14 ¶ 11 (“All case dispositive motions shall be served and filed on or before June 9, 2023.”) (emphasis removed). The *Ecolab* Court did not address whether the movant’s Rule 12(c) motion was, or was not, subject to the deadline set forth in the scheduling order governing that case. Thus, the *Ecolab* Court did not have an opportunity to consider whether the deadline set forth in the scheduling order operated in tandem with Rule 12’s requirement that a motion for judgment on the pleadings be brought “early enough not to delay trial.” Fed. R. Civ. P. 12(c).

On the other hand, the Seventh Circuit in *Riggins v. Walter*, 279 F.3d 422, 427-28 (7th Cir. 1995) did address whether a scheduling order’s deadline operates in tandem with Rule 12’s requirement that a motion for judgment on the pleadings be brought “early enough not to delay trial.” Fed. R. Civ. P. 12(c). Observing that “Rule 12(c) does not restrict the court’s discretion under Rule 16(b),” the *Riggins* panel “h[e]ld that a Rule 12(c) motion may be brought after the dispositive motions deadline if the moving party complies with the requirements of Rule 16(b) *and* if it will not delay trial.” *Id.* Outside the Seventh Circuit, courts in the Fifth Circuit, Sixth Circuit, Eighth Circuit, Ninth Circuit, and Tenth Circuit have reached similar conclusions.<sup>11</sup>

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was filed after the deadline for amending pleadings. *See* 2023 WL 7019266, at \*9 (“Had DuBois filed the motion as a Rule 12(b)(6) motion, Ecolab would have had the opportunity long ago to correct any pleading deficiency. That is obviously not possible now. The motion is filed too late, and it will be denied.”).

<sup>11</sup> *See, e.g., Ningde Amperex Tech. Ltd. v. Zhuhai CosMX Battery Co.*, No. 2:22-CV-00232-JRG, 2024 WL 83507, at \*1 (E.D. Tex. Jan. 8, 2024); *B.H. by & through L.H. v. Obion Cnty. Bd. of Educ.*, No. 18-CV-01086-STA-JAY, 2021 WL 3432891, at \*2 (W.D. Tenn. Aug. 5, 2021); *Regents of Univ. of Minnesota v. AT&T Mobility LLC*, No. CV 14-4666 (JRT/TNL), 2024 WL 3904703,

Nevertheless, in this instance, the Court agrees with Defendant that its Motion is timely. Importantly, this Court previously declined to apply a similar scheduling order provision to Rule 12(c) motions in *Int'l Bus. Machines Corp. v. Zynga Inc.*, No. CV 22-590-GBW, D.I. 464 (D. Del. June 28, 2024) (“The Court’s case dispositive motion procedure applies to ‘dispositive motion[s] under Rule 56’ and Daubert motions.”) (alteration in original). While the *Zynga* case is nonbinding,<sup>12</sup> the Court finds its rationale persuasive. See Bryan A. Garner et al., *The Law of Judicial Precedent* 170 (2016) (“Persuasiveness [of nonbinding precedent] usually derives from sound reasoning, logical structure, authoritative support, evidence that the case received the careful consideration of the court, and citation of pertinent authorities.”). Thus, in this instance, the Court finds that Defendant’s Motion is timely and will consider it. Cf. *PDX N., Inc. v. Comm’r New Jersey Dep’t of Lab. & Workforce Dev.*, 978 F.3d 871, 880 n.6 (3d Cir. 2020) (“Generally, matters of docket control, like whether to consider a motion, are committed to the sound discretion of the district court.”) (quotation marks omitted).

**B. The Court Excludes Certain Matters Outside the Pleadings**

Both parties have presented the Court with materials outside the pleadings. See D.I. 183-1 (excerpts from prosecution history of the patent application corresponding to the ’073 patent); D.I. 183-2 (excerpts from prosecution history of the patent application corresponding to the ’741

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at \*3 (D. Minn. Aug. 22, 2024); *Inland W. Avondale McDowell, L.L.C. v. Wattles*, No. CV-11-02277-PHX-PGR, 2013 WL 12251289, at \*1 (D. Ariz. Apr. 16, 2013); *Wright v. Oge Energy Corp.*, No. CIV-23-864-F, 2024 U.S. Dist. LEXIS 222158, at \*1-2 (W.D. Okla. Dec. 9, 2024).

<sup>12</sup> “A decision of a federal district court judge is not binding precedent in either a different judicial district, the same judicial district, or even upon the same [district] judge in a different case.” *Daubert v. NRA Grp., LLC*, 861 F.3d 382, 395 (3d Cir. 2017) (alteration in original) (quoting *Camreta v. Greene*, 563 U.S. 692, 709 n.7 (2011)).



patent); D.I. 183-3 (Transcript of Vladimir Malenovsky, Ph.D.) (the “Malenovsky Testimony”); D.I. 186-1 (Exhibit C-1 to HMD’s Invalidity Contentions) (the “Invalidity Contentions”).

“Generally, the Court does not consider matters outside the pleadings when ruling on a motion for judgment on the pleadings.” *Giove v. Holden*, No. CIV.A. 11-735-SLR, 2012 WL 2357586, at \*2 (D. Del. June 19, 2012); *see Trevino v. Merscorp, Inc.*, 583 F. Supp. 2d 521, 526-27 (D. Del. 2008); *Miller Mendel, Inc. v. City of Anna, Texas*, 107 F.4th 1345, 1351 (Fed. Cir. 2024).<sup>13</sup> “Motions for judgment on the pleadings under Rule 12(c) are considered under the same standard as motions to dismiss under Rule 12(b)(6), and it is well established that a motion to dismiss may be decided based only on the ‘complaint, exhibits attached to the complaint, matters of public record, as well as undisputedly authentic documents if the complainant’s claims are based upon these documents.’” *Wolfington v. Reconstructive Orthopaedic Assocs. II PC*, 935 F.3d 187, 197 (3d Cir. 2019) (footnotes omitted) (quoting *Mayer v. Belichick*, 605 F.3d 223, 230 (3d Cir. 2010)).

Moreover, except for motions challenging jurisdiction,<sup>14</sup> “[o]ur Court of Appeals has regularly held that a district court, in ruling on a [Rule 12] motion . . . , can only consider materials

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<sup>13</sup> “[W]hen ruling on a Rule 12(c) motion, district courts have discretion to consider evidence outside the complaint for purposes of deciding whether to accept that evidence and convert the motion into one for summary judgment.” *Eagle Pharms. Inc. v. Slayback Pharma LLC*, 958 F.3d 1171, 1177 (Fed. Cir. 2020). “Pursuant to [Rule] 12(d), if ‘matters outside the pleadings are presented to and not excluded by the court, the motion [for judgment on the pleadings] must be treated as one for summary judgment under Rule 56.’” *Giove*, 2012 WL 2357586, at \*2 (some alterations in original) (quoting Fed. R. Civ. P. 12(d)); *see Linton v. Naadam Inc.*, No. CV 24-94-GBW, D.I. 53 at 5-6 (D. Del. Feb. 25, 2025); *Miller Mendel*, 107 F.4th at 1351.

<sup>14</sup> “When examining subject matter jurisdiction, we may consider facts outside the pleadings.” *Stouffer v. Union R.R. Co., LLC*, 85 F.4th 139, 143 (3d Cir. 2023); *see United States ex rel. Customs Fraud Investigations, LLC v. Victaulic Co.*, 839 F.3d 242, 251 (3d Cir. 2016) (“When a motion to dismiss implicates both Rule 12(b)(6) and Rule 12(b)(1), outside evidence may be considered for Rule 12(b)(1) purposes but not for Rule 12(b)(6) purposes.”).

outside the pleadings to esta[b]lish the truth of their existence, not the truth of their contents.” *Lupin Atlantis Holdings v. Ranbaxy Lab ’ys, Ltd.*, No. 10-3897, 2011 WL 1540199, at \*3 n.8 (E.D. Pa. Apr. 21, 2011); *see, e.g., Doe v. Princeton Univ.*, 30 F.4th 335, 342 (3d Cir. 2022) (“We have held, for example, that ‘we may take judicial notice of another court’s opinion—not for the truth of the facts recited therein, but for the existence of the opinion.’ So, too, with a public record, which may be considered ‘not for the truth of its contents, but rather as evidence of the information provided [that was relevant to the dispute].’”) (alterations in original) (citations omitted); *Rice v. Nathan Rice, Inc.*, No. 2:21-CV-00090-RJC, 2022 WL 3716551, at \*1 (W.D. Pa. May 18, 2022) (“In support of their requested relief, Plaintiffs rely on deposition testimony, a response to an interrogatory, and an email sent by Defendants’ counsel to Plaintiffs’ counsel. For purposes of judicial notice, the representations set forth in these documents cannot be accepted for the truth of the matter asserted.”); *Ricoh Co. v. Oki Data Corp.*, No. CV. 09-694-SLR, 2010 WL 3908603, at \*4 (D. Del. Sept. 30, 2010) (“[E]ven if the [C]ourt were to take judicial notice . . . , it would be improper to take notice of the truth of the contents of these documents.”).

In this instance, and to the extent necessary,<sup>15</sup> the Court takes judicial notice of the relevant portions of the patent prosecution histories (D.I. 183-1; D.I. 183-2) of the Challenged Patents. *See Redwood Techs., LLC v. Netgear, Inc.*, No. CV 22-1272-GBW, 2024 WL 4591852, at \*15 n.17 (D. Del. Oct. 28, 2024).<sup>16</sup>

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<sup>15</sup> Portions of the patent prosecution histories were filed alongside Plaintiff’s Complaint. *See* D.I. 1 at 17 n.6 (“Cited excerpts of the ’073 file history attached as Exhibit 8.”), 22 n.8 (“Cited excerpts of the ’741 file history attached as Exhibit 10.”).

<sup>16</sup> “Judicial notice may be taken at any stage of a proceeding[.]” *Mobility Workx, LLC v. Unified Pats., LLC*, 15 F.4th 1146, 1151 (Fed. Cir. 2021). “Requests for judicial notice are governed by Federal Rule of Evidence 201.” *Purdue Pharma L.P. v. Accord Healthcare Inc.*, No. CV 22-913-WCB, 2023 WL 5835811, at \*2 (D. Del. Sept. 8, 2023). “Under Rule 201, ‘[t]he court may judicially notice a fact that is not subject to reasonable dispute because it: (1) is generally known

As to the Malenovsky Testimony, which Defendant filed along with its opening brief, Defendant did not adequately explain why the Court should consider that document. Thus, the Court excludes this exhibit. *See, e.g., Overington v. Fisher*, No. CV 21-1133-RGA, 2022 WL 3027187, at \*2 (D. Del. Aug. 1, 2022) (“The Court will not consider Defendants’ exhibits and will treat their motion as a motion to dismiss”); *Rosenau v. Unifund Corp.*, 539 F.3d 218, 225 (3d Cir. 2008) (“[T]he factual question of whether Unifund has a Legal Department is inappropriate for resolution on a [Rule] 12(c) motion for judgment on the pleadings. . . . [I]n order to dispose of Rosenau’s claim, it is necessary to examine documents outside of the pleadings. It is the deposition transcripts and other discovery materials, not solely the pleadings, that show that Unifund has a Legal Department[.]”); *Greiser v. Chavez*, No. EDCV 22-1600 JGB (SPX), 2024 WL 3005898, at \*3 (C.D. Cal. Mar. 27, 2024) (“Courts in this circuit have denied requests for judicial notice of deposition transcripts pursuant to Federal Rule of Evidence 201(b)(2).”) (collecting cases); *GP3 II, LLC v. Bank of W.*, No. 20-00424-CV-W-BP, 2022 WL 22883468, at \*3 n.3 (W.D. Mo. Dec. 16, 2022) (“Litong asks the Court to take judicial notice of excerpts from Heitmann’s deposition. . . . The Court finds the above material does not meet th[e] [Rule 201(b)] standard.”).

As to the Invalidity Contentions, which Plaintiff filed along with its opposition brief, Plaintiff did not adequately explain why the Court should consider that document. Thus, the Court excludes this exhibit. *See, e.g., Winter v. Richman*, No. CV 17-1322-LPS, 2021 WL 3618048, at \*2 (D. Del. Aug. 16, 2021) (“Plaintiff filed an affidavit outside the pleadings in her opposition to the motion to dismiss. This matter is not treated as one for summary judgment and, therefore, the affidavit is not considered.”); *Huntzinger v. Aqua Lung Am., Inc.*, No. 15CV1146-WQH-AGS,

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throughout the trial court’s territorial jurisdiction; or (2) can be accurately and readily determined from sources whose accuracy cannot reasonably be questioned.” *Id.* (quoting Fed. R. Evid. 201(b)).

2018 WL 325024, at \*5 (S.D. Cal. Jan. 8, 2018) (“The Court declines to take judicial notice of any discovery responses in this litigation because they are not the proper subject of judicial notice.”); *Do v. GW Trucking Inc.*, No. 1:23-CV-00076-MJT, 2024 WL 604715, at \*7 (E.D. Tex. Jan. 24, 2024) (finding interrogatory response was not subject to judicial notice), *report and recommendation adopted*, (E.D. Tex. Feb. 13, 2024).

As the Court does not treat Defendant’s Motion as a summary judgment motion, the Court need not decide whether Defendant’s Motion is a premature motion under Paragraph 20 of the Scheduling Order. *Compare* D.I. 43 ¶ 20(a) (“No case dispositive motion under Rule 56 may be filed more than ten days before this date without leave of the Court.”), *with Fed. Ins. Co. v. KDW Restructuring & Liquidation Servs., LLC*, 889 F. Supp. 2d 694, 696 n.2 (M.D. Pa. 2012) (“Although Federal’s motion for judgment on the pleadings (Doc. 20) which was converted to a motion for summary judgment has not been adjudicated, it will be denied as moot and this Court will address this May 16, 2012 motion for summary judgment (Doc. 56) which comes at the completion of discovery pursuant to stipulation by the parties.”).

**C. Defendant Has Not Established That Any Claims Are Representative of the Challenged Claims**

For each of the Challenged Patents, in a cursory footnote,<sup>17</sup> Defendant asserts that “[i]ndependent claim 1 can be treated as exemplary for purposes of this motion.” D.I. 182 at 8 n.6, 14 n.9. “Limiting the analysis of a § 101 challenge to representative claims is proper when the claims at issue are ‘substantially similar and linked to the same’ ineligible concept.” *Mobile Acuity*, 110 F.4th at 1290 (quoting *Cleveland Clinic Found. v. True Health Diagnostics LLC*, 859 F.3d 1352, 1360 (Fed. Cir. 2017)). As explained below, the Court agrees with Plaintiff that

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<sup>17</sup> “Arguments raised in cursory footnotes are forfeited.” *Realtek*, No. CV 24-1235-GBW, D.I. 60 at 16 n.10.

Defendant has not established that “Claim 1 is [] representative of all asserted claims.” D.I. 185 at 15 (emphasis removed), 20 (emphasis removed).

“The patent challenger who identifies a claim as representative of a group of claims bears the initial burden to make a prima facie showing that the group of claims are ‘substantially similar and linked to the same’ ineligible concept.” *Mobile Acuity*, 110 F.4th at 1290 (quoting 859 F.3d at 1360).<sup>18</sup>

“In the context of a dispute over the representativeness of a claim, . . . if the patent owner presents a non-frivolous argument that the eligibility of the purported representative claim does not fairly represent all claims in the group for purposes of eligibility, the patent challenger bears the burden to prove either that (i) the representative claim is, in fact, representative, in that any differences among the claims are not material to the eligibility analysis (i.e., the claims are substantially similar and are linked to the same ineligible concept); or (ii) each separate claim (i.e., those not fairly represented by the purported representative claim) is ineligible for patenting.” *Mobile Acuity*, 110 F.4th at 1291 (footnote omitted); see *JSDQ Mesh Techs. LLC v. Fluidmesh Networks, LLC*, No. 16-CV-212-GMS, 2016 WL 4639140, at \*3 (D. Del. Sept. 6, 2016) (“Because the parties dispute the representativeness of claim 47, Fluidmesh must provide more meaningful analysis for each of the non-representative claims.”).

In this instance, it is unclear whether Defendant even attempted to satisfy its “initial burden to make a prima facie showing that [a] group of claims are ‘substantially similar and linked to the same’ ineligible concept.” *Mobile Acuity*, 110 F.4th at 1290 (quoting 859 F.3d at 1360). On one hand, Defendant’s briefing is cursory on many of the Challenged Claims. On the other hand,

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<sup>18</sup> “Courts have declined to rule on a § 101 motion to dismiss when the accused infringer failed to meet its burden to show that its choice of representative claim is proper.” *Recentive Analytics, Inc. v. Fox Corp.*, 692 F. Supp. 3d 438, 450 (D. Del. 2023), *aff’d*, 134 F.4th 1205 (Fed. Cir. 2025).

Defendant merely asserts that certain claims “*can be* treated as exemplary.” D.I. 182 at 8 n.6 (emphasis added), 14 n.9 (emphasis added). Defendant’s opening brief (D.I. 182) does not clearly state that the Court *should* treat any claims as representative. Moreover, Defendant’s reply brief asserts that “HMD does not treat any claim as representative[.]” D.I. 187 at 10 (emphasis removed).

To the extent that Defendant is requesting that the Court limit its analysis to representative claims, the Court finds that Defendant has not met its “initial burden to make a prima facie showing that [a] group of claims are ‘substantially similar and linked to the same’ ineligible concept.” *Mobile Acuity*, 110 F.4th at 1290 (quoting 859 F.3d at 1360). Thus, the Court will not limit its analysis to representative claims.<sup>19</sup> Accordingly, at this stage, the Court need not decide whether Plaintiff has “provide[d] a non-frivolous argument as to why claim 1 [of each Challenged Patent] should not be treated as representative for all claims.” *Glanta Ltd. v. Soapy Care Ltd.*, No. CV 24-00365-RGA, \_\_\_ F.Supp.3d \_\_\_, 2025 WL 219971, at \*2 (D. Del. Jan. 16, 2025).

#### **D. Subject Matter Eligibility**

For the reasons stated below, the Court denies Defendant’s Motion.

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<sup>19</sup> See, e.g., *Blix Inc. v. Apple, Inc.*, No. CV 19-1869-LPS, 2020 WL 7027494, at \*4 (D. Del. Nov. 30, 2020) (“Apple and Blix dispute whether claim 17 is representative, and (particularly given the parties’ briefing) the Court is not in a position to conclude at this stage of the proceedings that all of the remaining claim limitations lack distinctive significance. Accordingly, the Court will decide only the patent eligibility of claim 17, which is the focus of the parties’ briefing.”) (citation omitted); *Trackthings LLC v. Netgear, Inc.*, No. CV 22-981-RGA-JLH, 2023 WL 4926184, at \*11 n.19 (D. Del. Aug. 2, 2023) (“Having independently reviewed the claims, the Court cannot conclude on this record that the claims are ‘substantially similar and linked to the same abstract idea.’”) (quoting *Content Extraction and Transmission LLC v. Wells Fargo Bank, N.A.*, 776 F.3d 1343, 1348 (Fed. Cir. 2014)), *report and recommendation adopted*, No. CV 22-981-RGA-JLH, 2023 WL 5993186 (D. Del. Sept. 15, 2023).

## 1. The Challenged Claims of the '073 Patent Withstand *Alice* Scrutiny

According to Plaintiff, “[t]he inventions disclosed in the '073 patent relate to the technical problem of ‘sound activity detection, background noise estimation and sound signal classification where sound is understood as a useful signal.’” D.I. 1 ¶ 64 (quoting '073 patent, 1:7-9); *see id.* ¶ 66.

Defendant contends that the following claims of the '073 patent are invalid:

1. A method for estimating a tonal stability of a sound signal using a frequency spectrum of the sound signal, the method comprising:
  - calculating a current residual spectrum of the sound signal by subtracting from the frequency spectrum of the sound signal a spectral floor defined by minima of the frequency spectrum;
  - detecting a plurality of peaks in the current residual spectrum as pieces of the current residual spectrum between pairs of successive minima of the current residual spectrum;
  - calculating a correlation map between each detected peak of the current residual spectrum and a shape in a previous residual spectrum corresponding to the position of the detected peak; and
  - identifying the tonal stability of the sound signal based on calculating a long-term correlation map, wherein the long-term correlation map is calculated based on an update factor, the correlation map of a current frame, and an initial value of the long term correlation map.
2. A method as defined in claim 1, wherein calculating the current residual spectrum comprises:
  - searching for the minima in the frequency spectrum of the sound signal in the current frame;
  - estimating the spectral floor by connecting the minima of the frequency spectrum with each other; and
  - subtracting the estimated spectral floor from the frequency spectrum of the sound signal in the current frame so as to produce the current residual spectrum.
3. A method as defined in claim 1, wherein detecting the peaks in the current residual spectrum comprises locating a maximum between each pair of two consecutive minima of the current residual spectrum.
6. A method as defined in claim 1, further comprising detecting strong tones in the sound signal.

- 10.** A method for detecting sound activity in a sound signal, wherein the sound signal is classified as one of an inactive sound signal and an active sound signal according to the detected sound activity in the sound signal, the method comprising:  
    estimating a parameter related to a tonal stability tonal stability of the sound signal used for distinguishing a music signal from a background noise signal;  
    wherein the tonal stability tonal stability estimation is performed according to claim 1.
- 11.** A method as defined in claim 10, further comprising preventing update of noise energy estimates when a tonal sound signal is detected.
- 12.** A method as defined in claim 10, wherein detecting the sound activity in the sound signal further comprises using a signal-to-noise ratio (SNR)-based sound activity detection.
- 13.** A method as defined in claim 12, wherein using the signal-to-noise ratio (SNR)-based sound activity detection comprises detecting the sound signal based on a frequency dependent signal-to-noise ratio (SNR).
- 14.** A method as defined in claim 12, wherein using the signal-to-noise ratio (SNR)-based sound activity detection comprises comparing an average signal-to-noise ratio ( $\text{SNR}_{av}$ ) to a threshold calculated as a function of a long-term signal-to-noise ratio ( $\text{SNR}_{LT}$ ).
- 15.** A method as defined in claim 14, wherein using the signal-to-noise ratio (SNR)-based sound activity detection in the sound signal further comprises using noise energy estimates calculated in a previous frame in a SNR calculation.
- 16.** A method as defined in claim 15, wherein using the signal-to-noise ratio (SNR)-based sound activity detection further comprises updating the noise estimates for a next frame.
- 17.** A method as defined in claim 16, wherein updating the noise energy estimates for a next frame comprises calculating an update decision based on at least one of a pitch stability, a voicing, a non-stationarity parameter of the sound signal and a ratio between a second order and a sixteenth order of linear prediction residual error energies.
- 20.** A method as defined in claim 10, wherein estimating the parameter related to the tonal stability tonal stability of the sound signal prevents updating of noise energy estimates when a music signal is detected.
- 30.** A device for estimating a tonal stability tonal stability of a sound signal using a frequency spectrum of the sound signal, the device comprising:  
    means for calculating a current residual spectrum of the sound signal by subtracting from the frequency spectrum of the sound signal a spectral floor defined by minima of the frequency spectrum;



- means for detecting a plurality of peaks in the current residual spectrum as pieces of the current residual spectrum between pairs of successive minima of the current residual spectrum;
  - means for calculating a correlation map between each detected peak of the current residual spectrum and a shape in a previous residual spectrum corresponding to the position of the detected peak; and
  - means for identifying the tonal stability of the sound signal based on calculating a long-term correlation map, wherein the long-term correlation map is calculated based on an update factor, the correlation map of a current frame, and an initial value of the long-term correlation map.
- 31.** A device for estimating a tonal stability of a sound signal using a frequency spectrum of the sound signal, the device comprising:
- a calculator of a current residual spectrum of the sound signal by subtracting from the frequency spectrum of the sound signal a spectral floor defined by minima of the frequency spectrum;
  - a detector of a plurality of peaks in the current residual spectrum as pieces of the current residual spectrum between pairs of successive minima of the current residual spectrum;
  - a calculator of a correlation map between each detected peak of the current residual spectrum and a shape in a previous residual spectrum corresponding to the position of the detected peak; and
  - a calculator identifying the tonal stability of the sound signal based on calculating a long-term correlation map, wherein the long-term correlation map is calculated based on an update factor, the correlation map of a current frame, and an initial value of the long-term correlation map.
- 32.** A device as defined in claim 31, wherein the calculator of the current residual spectrum comprises:
- a locator of the minima in the frequency spectrum of the sound signal in the current frame;
  - an estimator of the spectral floor which connects the minima of the frequency spectrum with each other; and
  - a subtractor of the estimated spectral floor from the frequency spectrum so as to produce the current residual spectrum.
- 34.** A device as defined in claim 31, further comprising a detector of strong tones in the sound signal.
- 36.** A device for detecting sound activity in a sound signal, wherein the sound signal is classified as one of an inactive sound signal and an active sound signal according to the detected sound activity in the sound signal, the device comprising:

- a tonal stability tonal stability estimator of the sound signal, used for distinguishing a music signal from a background noise signal;  
wherein the tonal stability tonal stability estimator comprises a device according to claim 31.
- 37.** A device as defined in claim 36, further comprising a signal-to-noise ratio (SNR)-based sound activity detector.
- 38.** A device as defined in claim 37, wherein the (SNR)-based sound activity detector comprises a comparator of an average signal to noise ratio ( $SNR_{av}$ ) with a threshold which is a function of a long-term signal to noise ratio ( $SNR_{LT}$ ).
- 39.** A device as defined in claim 37, further comprising a noise estimator for updating noise energy estimates in a calculation of a signal-to-noise ratio (SNR) in the SNR-based sound activity detector.
- 41.** A device as defined in claim 36, further comprising a calculator of a spectral parameter used for detecting spectral changes and spectral attacks in the sound signal.

'073 patent, 27:31-50 (claim 1), 27:51-59 (claim 2), 27:60-63 (claim 3), 28:17-18 (claim 6), 28:29-38 (claim 10), 28:39-41 (claim 11), 28:42-44 (claim 12), 28:45-48 (claim 13), 28:49-53 (claim 14), 28:54-57 (claim 15), 28:58-61 (claim 16), 28:62-67 (claim 17), 29:11-14 (claim 20), 30:1-22 (claim 30), 30:23-44 (claim 31), 30:45-53 (claim 32), 28:61-62 (claim 34), 31:6-15 (claim 36), 31:16-17 (claim 37), 32:1-4 (claim 38), 32:5-8 (claim 39), 32:14-16 (claim 41).<sup>20</sup>

According to Defendant, “the claims of the ’073 [p]atent are directed to an algorithm to estimate a property of a sound signal.” D.I. 182 at 8; *see id.* at 10-11 (“[T]he claims of the ’073 [p]atent are directed to a ‘metric’—an algorithm, to estimate the ‘tonal stability’ of a sound signal, that may be implemented on a generic computer.”). Plaintiff disagrees. Plaintiff responds that “[t]he ’073 patent claims are directed to solving technical problems of the prior art related to efficiently coding different types of sound signals.” D.I. 185 at 9 (emphasis removed).

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<sup>20</sup> The Court previously accepted the parties’ stipulation that various preambles are limiting. *See VoiceAge EVS LLC v. HMD Glob. OY*, No. CV 19-1945-GBW, 2023 WL 356213, at \*2 (D. Del. Jan. 23, 2023); D.I. 128. The Court also accepted the parties’ stipulation that “tonal stability tonal stability” refers to “tonal stability.” *See* 2023 WL 356213, at \*2; D.I. 128.

As explained below, the Court finds that Defendant has not met its burden to prove the ineligibility of any of the '073 patent Challenged Claims.

**a. Alice Step One: Defendant Has Not Established that the '073 Patent Challenged Claims are Directed to Abstract Ideas**

“At *Alice* step one, [the Court] must determine whether the claims at issue are directed to patent-ineligible subject matter, here, [purportedly] an abstract idea.” *Broadband iTV, Inc. v. Amazon.com, Inc.*, 113 F.4th 1359, 1367 (Fed. Cir. 2024); see *US Synthetic Corp. v. Int’l Trade Comm’n*, 128 F.4th 1272, 1283 (Fed. Cir. 2025) (noting that at step one courts “try[] to ascertain as a matter of law whether a patent claim is directed to a specific implementation of an idea or merely just the idea itself”).<sup>21</sup> To do so, the Court “look[s] at the focus of the claimed advance over the prior art to determine if the claim’s character as a whole is directed to excluded subject matter.” *Recentive Analytics, Inc. v. Fox Corp.*, 134 F.4th 1205, 1211-12 (Fed. Cir. 2025) (quotation marks omitted) (quoting *Koninklijke KPN N.V. v. Gemalto M2M GmbH*, 942 F.3d 1143, 1149 (Fed. Cir. 2019)); see *US Synthetic*, 128 F.4th at 1281.

A patent challenger “must articulate with specificity what the claims are directed to.” *Visual Memory*, 867 F.3d at 1258; see *Core Wireless Licensing S.A.R.L. v. LG Elecs., Inc.*, 880 F.3d 1356, 1361 (Fed. Cir. 2018). To meet its burden at *Alice* step one, Defendant must propose an abstract idea that fairly characterizes the Challenged Claims and thus avoids oversimplifying the Challenged Claims. See, e.g., *TecSec, Inc. v. Adobe Inc.*, 978 F.3d 1278, 1294 (Fed. Cir. 2020) (“The Step 1 ‘directed to’ analysis called for by our cases depends on an accurate characterization of what the claims require and of what the patent asserts to be the claimed advance.”); *F45 Training*

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<sup>21</sup> At this stage, “all factual inferences drawn from the specification must be weighed in favor of [Plaintiff], the non-moving party.” *Visual Memory LLC v. NVIDIA Corp.*, 867 F.3d 1253, 1261-62 (Fed. Cir. 2017).

*Pty Ltd. v. Body Fit Training USA Inc.*, No. 21-385-LPS, 2021 WL 2779130, at \*6 (D. Del. July 2, 2021) (*Alice* step one burden not met, where movant “proposed abstract idea [that] oversimplifie[d] what [c]laim 1 is directed to”); *Content Square SAS v. Quantum Metric, Inc.*, No. 20-832-LPS, 2021 U.S. Dist. LEXIS 51656, at \*12 (D. Del. Mar. 18, 2021) (*Alice* step one burden not met, where movant proposed abstract idea that was not “a fair characterization of what the claims are directed to”); *Mod Stack LLC v. Aculab, Inc.*, No. CV 18-332-CFC, 2019 WL 3532185, at \*3 (D. Del. Aug. 2, 2019) (*Alice* step one burden not met, where movant “proposed abstract idea [that did not] satisfactorily capture[] the substance of the claims”).

In this instance, Defendant contends that “[e]very asserted claim of the ’073 [p]atent is directed (as a method or device) to ‘estimating a tonal stability of a sound signal’ by performing a series of mathematical calculations.” D.I. 182 at 8. According to Defendant, “[t]hat is simply an algorithm to identify stable tones in a sound signal, which is an abstract idea.” *Id.* Defendant also asserts that “[t]he ’073 [p]atent [] concedes that the algorithm it describes is simply replicating the human experience of recognizing stable tones attributable to music,” *id.* at 11,<sup>22</sup> and “[a]ll the ’073 [p]atent proposes is a mathematical way to estimate it.” *Id.* at 11. Thus, Defendant asserts that the 073 patent’s Challenged Claims “fail at step 1 because they are fundamentally directed to algorithms.” D.I. 187 at 3. Plaintiff disagrees.

Plaintiff asserts that although “[t]he ’073 patent uses mathematical relationships, . . . its claims seek to protect only the application of these relationships to the unconventional method of estimating tonal stability as disclosed in the patent.” D.I. 185 at 11. According to Plaintiff, “[t]he ’073 patent claims . . . are directed to a technical solution to technical problems with the detection

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<sup>22</sup> The single citation supporting this assertion was excluded. *See supra* Part III.B (excluding Malenovsky Testimony).

and distinguishing of different types of sound signals in prior art CELP<sup>[23]</sup> coders.” *Id.* at 12; *see id.* at 3 (“To address the problem of misclassification of music signals in prior art VAD-based algorithms, the ’073 patent explains a method for detecting tonal stability of a sound signal.”).<sup>24</sup> Plaintiff also asserts that “[u]nder HMD’s view, all codecs would be ineligible for patent protection simply because they are most easily described according to how they perform these operations to transform tangible sound signals in real time.” D.I. 185 at 2.

Before addressing the parties’ dispute about whether the Challenged Claims are directed to abstract algorithms, the Court provides a brief overview on algorithms.

“An algorithm is a specific series of steps that accomplish a particular operation.” *M-I L.L.C. v. Q’Max Sols., Inc.*, No. CV H-18-1099, 2020 WL 4549210, at \*4 (S.D. Tex. Aug. 6, 2020); *see, e.g., Alfred E. Mann Found. for Sci. Research v. Cochlear Corp.*, 841 F.3d 1334, 1342 (Fed. Cir. 2016) (“An ‘algorithm’ is ‘a step-by-step procedure for accomplishing a given result[.]’”); *BNP Holdings LLC v. Intuit Inc.*, No. CV 22-65, 2023 WL 6621363, at \*7 n.8 (D. Del. Oct. 11, 2023) (“An algorithm is broadly: a step-by-step procedure for solving a problem or accomplishing some end.”) (emphasis removed and quotation marks omitted); Donald S. Chisum, *Chisum on Patents* § 1.03 (2025) (“An algorithm, by proper definition, is the essence of a ‘process,’ that is, a specific, step-by-step, repeatable series of steps that solves a problem.”). “A mathematical algorithm was defined [by the Supreme Court] in *Benson* as a procedure or formula

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<sup>23</sup> According to the ’073 patent’s specification, “Code-Excited Linear Prediction (CELP) coding is one of the best prior techniques for achieving a good compromise between the subjective quality and bit rate.” ’073 patent, 2:3-5.

<sup>24</sup> “If the focus of the claim is a specific and concrete technological advance, for example an improvement to a technological process or in the underlying operation of a machine, our inquiry ends and the claim is eligible.” *Adasa Inc. v. Avery Dennison Corp.*, 55 F.4th 900, 908 (Fed. Cir. 2022) (collecting cases).

for solving a particular mathematical problem.” *Arrhythmia Rsch. Tech., Inc. v. Corazonix Corp.*, 958 F.2d 1053, 1056 n.3 (Fed. Cir. 1992).

“[A]n algorithm can be expressed in many forms, including flow charts, a series of specific steps, mathematical formula,<sup>[25]</sup> prose,<sup>[26]</sup> and so on.” *Triton Tech of Texas, LLC v. Nintendo of Am., Inc.*, 753 F.3d 1375, 1378 (Fed. Cir. 2014); *see Alfred E. Mann*, 841 F.3d at 1342. “[A]ny step-by-step process, whether mechanical, electrical, biological or chemical, involves an ‘algorithm’ in the broader sense of the term.” *Arrhythmia*, 958 F.2d at 1056 n.3.

Some, but not all, claims that involve algorithms are invalid under the *Alice/Mayo* test. *See, e.g., In re Bd. of Trs. of Leland Stanford Junior Univ.*, 991 F.3d 1245, 1250 (Fed. Cir. 2021) (“Courts have long held that mathematical algorithms for performing calculations, without more, are patent ineligible under § 101.”); *XY, LLC v. Trans Ova Genetics, LC*, 968 F.3d 1323, 1332 (Fed. Cir. 2020) (“As the Supreme Court has stated, ‘a process is not unpatentable simply because it contains a law of nature or a mathematical algorithm.’”); *Clarilogic, Inc. v. FormFree Holdings Corp.*, 681 F. App’x 950, 954 (Fed. Cir. 2017) (nonprecedential) (“To be sure, claiming an algorithm does not alone render subject matter patent eligible.”); *Digitech Image Techs., LLC v. Elecs. for Imaging, Inc.*, 758 F.3d 1344, 1350 (Fed. Cir. 2014) (“In determining whether a process

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<sup>25</sup> “The Supreme Court [has] recognized that a mathematical formula . . . is not itself patent-eligible subject matter, even if limited to a particular technological environment or accompanied by ‘insignificant post-solution activity.’” *Thales Visionix Inc. v. United States*, 850 F.3d 1343, 1347 (Fed. Cir. 2017) (quoting *Diamond v. Diehr*, 450 U.S. 175, 191-92 (1981)).

<sup>26</sup> “Even described ‘in prose,’ an algorithm is still ‘a step-by-step procedure for accomplishing a given result.’” *Ergo Licensing, LLC v. CareFusion 303, Inc.*, 673 F.3d 1361, 1365 (Fed. Cir. 2012) (quoting *Typhoon Touch Techs., Inc. v. Dell, Inc.*, 659 F.3d 1376, 1385 (Fed. Cir. 2011)).

claim recites an abstract idea, we must examine the claim as a whole, keeping in mind that an invention is not ineligible just because it relies upon a law of nature or mathematical algorithm.”).

Below the Court provides examples of claims that were challenged as directed to mathematical algorithms, such as mathematical formulas. *See, e.g., Int’l Bus. Machines Corp. v. Zynga Inc.*, No. CV 22-590-GBW, 2024 WL 3967402, at \*3 (D. Del. Aug. 28, 2024) (“In deciding questions of patent eligibility and, specifically, in navigating the parameters of an abstract idea, it is proper for courts to compare the claims at issue to those previously analyzed in other judicial decisions.”); *ADASA*, 55 F.4th at 909; *Blackbird Tech v. Uber Techs., Inc.*, No. CV 19-561 (MN), 2020 WL 58535, at \*3 (D. Del. Jan. 6, 2020).<sup>27</sup>

An example of a claim that withstood *Alice* scrutiny is found in *California Inst. of Tech. v. Broadcom Ltd.*, 25 F.4th 976 (Fed. Cir. 2022). In the *Broadcom* case, the Federal Circuit found that claim 13 of U.S. Patent No. 7,916,781, which is reproduced below, “claims more than a mathematical formula because it is directed to an efficient, improved method of encoding data that relies in part on irregular repetition” (*id.* at 988):

13. A method of encoding a signal, comprising:
  - receiving a block of data in the signal to be encoded, the block of data including information bits; and
  - performing an encoding operation using the information bits as an input, the encoding operation including an accumulation of mod-2 or exclusive-OR sums of bits in subsets of the information bits, the encoding operation generating at least a portion of a codeword,
- wherein the information bits appear in a variable number of subsets.

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<sup>27</sup> The Court is mindful that “[w]hile prior cases can be helpful in analyzing eligibility, whether particular claim limitations are abstract or, as an ordered combination, involve an inventive concept that transforms the claim into patent eligible subject matter, must be decided on a case-by-case basis in light of the particular claim limitations, patent specification, and invention at issue.” *CosmoKey Sols. GmbH & Co. KG v. Duo Sec. LLC*, 15 F.4th 1091, 1099 (Fed. Cir. 2021); *see Green Mountain Glass, LLC v. Saint-Gobain Containers, Inc.*, No. CV 14-392-GMS, 2016 WL 7510247, at \*1 n.1 (D. Del. Oct. 11, 2016).

*Id.* at 984 (quoting U.S. Patent No. 7,916,781, 8:7-17).<sup>28</sup> The Federal Circuit remarked that the “alleged improvement is not patent ineligible simply because it employs a mathematical formula.” 25 F.4th at 988. Thus, the *Broadcom* case illustrates that “[a] claim containing a mathematical formula can satisfy the requirements of § 101 if it ‘implements or applies that formula in a structure or process which, when considered as a whole, is performing a function which the patent laws were designed to protect.’” *Evolved Wireless, LLC v. Apple Inc.*, 221 F. Supp. 3d 485, 491 (D. Del. 2016) (quoting *Diehr*, 450 U.S. at 192).

An example of claims that withstood *Alice* scrutiny is found in *Thales Visionix Inc. v. United States*, 850 F.3d 1343 (Fed. Cir. 2017). In the *Thales* case, the Federal Circuit found that claims 1 and 22 of U.S. Patent No. 6,474,159, which are reproduced below, “are not merely directed to the abstract idea of using ‘mathematical equations for determining the relative position of a moving object to a moving reference frame,’ as the [lower] [c]ourt found” (*id.* at 1348):

1. A system for tracking the motion of an object relative to a moving reference frame, comprising:
  - a first inertial sensor mounted on the tracked object;
  - a second inertial sensor mounted on the moving reference frame; and
  - an element adapted to receive signals from said first and second inertial sensors and configured to determine an orientation of the object relative to the moving reference frame based on the signals received from the first and second inertial sensors.
22. A method comprising determining an orientation of an object relative to a moving reference frame based on signals from two inertial sensors mounted respectively on the object and on the moving reference frame.

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<sup>28</sup> Given that the Federal Circuit highlighted that the patent challengers’ “briefing on th[e] issue was cursory,” 25 F.4th at 988, the weight of this opinion is arguably diminished. *Cf. Samuel C. Johnson 1988 Tr. v. Bayfield Cnty., Wis.*, 649 F.3d 799, 805 (7th Cir. 2011) (Posner, J.) (“[W]e are not bound by rulings on issues that the briefs skirted and the opinion barely addressed.”).



*Id.* at 1345-46 (quoting U.S. Patent No. 6,474,159, 11:49-59 (claim 1), 13:24-27 (claim 22)). The Federal Circuit “noted that even though the system used conventional sensors and a mathematical equation, the claims specified a particular configuration of the sensors and a particular method of utilizing the raw data that eliminated many of the complications inherent in conventional methods.” *Core Wireless Licensing S.A.R.L. v. LG Elecs., Inc.*, 880 F.3d 1356, 1362 (Fed. Cir. 2018) (citing 850 F.3d at 1348-49). Ultimately, the Federal Circuit “held the claims were not directed to an abstract idea because they ‘specif[ied] a particular configuration of inertial sensors and a particular method of using the raw data from the sensors in order to more accurately calculate the position and orientation of an object on a moving platform.’” *Cisco Sys., Inc. v. Uniloc 2017 LLC*, 813 F. App’x 495, 498 (Fed. Cir. 2020) (nonprecedential) (alteration in original) (quoting 850 F.3d at 1349).

An example of a claim that did not pass *Alice* scrutiny is found in *In re Bd. of Trs. of Leland Stanford Junior Univ.*, 991 F.3d 1245 (Fed. Cir. 2021). In the *Stanford* case, the Federal Circuit found that claim 1 of U.S. Patent Application No. 13/486,982,<sup>29</sup> which is reproduced below, is “directed to the use of mathematical calculations and statistical modeling” (*id.* at 1250):

1. A computerized method for inferring haplotype phase in a collection of unrelated individuals, comprising:

- receiving genotype data describing human genotypes for a plurality of individuals and storing the genotype data on a memory of a computer system;
- imputing an initial haplotype phase for each individual in the plurality of individuals based on a statistical model and storing the initial haplotype

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<sup>29</sup> Contrary to Defendant’s representation, *see* D.I. 182 at 10, there was no “patentee” involved in this case. *See* 991 F.3d at 1246 (“[Appellant] appeals the final rejection of patent claims in its patent application.”). Patentee is a statutory term involving issued patents. *See* 35 U.S.C. § 100(d). The distinction between patent applications and issued patents is not trivial. Unlike issued patents, “[p]atent applications do not enjoy the statutory presumption of validity found in 35 U.S.C. § 282.” *Agilent Techs., Inc. v. Affymetrix, Inc.*, 567 F.3d 1366, 1379 (Fed. Cir. 2009).

phase for each individual in the plurality of individuals on a computer system comprising a processor a memory [sic];  
 building a data structure describing a Hidden Markov Model, where the data structure contains:  
     a set of imputed haplotype phases comprising the imputed initial haplotype phases for each individual in the plurality of individuals;  
     a set of parameters comprising local recombination rates and mutation rates;  
 wherein any change to the set of imputed haplotype phases contained within the data structure automatically results in re-computation of the set of parameters comprising local recombination rates and mutation rates contained within the data structure;  
 repeatedly randomly modifying at least one of the imputed initial haplotype phases in the set of imputed haplotype phases to automatically re-compute a new set of parameters comprising local recombination rates and mutation rates that are stored within the data structure;  
 automatically replacing an imputed haplotype phase for an individual with a randomly modified haplotype phase within the data structure, when the new set of parameters indicate that the randomly modified haplotype phase is more likely than an existing imputed haplotype phase;  
 extracting at least one final predicted haplotype phase from the data structure as a phased haplotype for an individual; and  
 storing the at least one final predicted haplotype phase for the individual on a memory of a computer system.

*Id.* at 1247-48 (alteration in original) (quoting J.A.). The Federal Circuit “reasoned that the ‘generic steps of implementing and processing calculations with a regular computer do not change the character of [the claim] from an abstract idea into a practical application.’” *Recentive*, 692 F. Supp. 3d at 455 (alteration in original) (quoting 991 F.3d at 1250).<sup>30</sup> This Court has observed that “*Stanford* does not hold that claims drawn to new and improved computerized methods of

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<sup>30</sup> The Federal Circuit did not consider the patent applicant’s contention “that one claimed advance is greater efficiency in computing haplotype phase.” 991 F.3d 1245 at 1251 (“Stanford has forfeited its argument that greater computational efficiency renders claim 1 patent eligible by failing to raise it before the Board. As a result, we will not consider it.”).

analyzing genetic data can never be patent eligible.” *Invitae Corp. v. Natera, Inc.*, No. CV 21-1147-LPS, 2021 WL 7209516, at \*3 (D. Del. Nov. 30, 2021).

As explained below, in this instance, “[s]tripped of excess verbiage,” Defendant’s contentions are cursory. *Affinity Labs of Texas, LLC v. DIRECTV, LLC*, 838 F.3d 1253, 1256 (Fed. Cir. 2016). Nearly half of Defendant’s opening briefing on *Alice* step one is merely a history lesson on Section 101 jurisprudence “[o]ver the last half-century” that Defendant does not cogently connect to the Challenged Claims. D.I. 182 at 9. As explained below, in the scant portions of Defendant’s opening briefing that evaluate the Challenged Claims under step one of the *Alice* test, Defendant makes a series of “cursory arguments” that it fails to “fully develop[.]” *ECB USA, Inc. v. Savencia, S.A.*, No. CV 19-731-RGA, 2020 WL 5369076, at \*4 (D. Del. Sept. 8, 2020) (“As a general prudential rule, courts only decide issues that are fairly and fully presented.”).

Defendant asserts that “[t]he ’073 [p]atent [] concedes that the algorithm it describes is simply replicating the human experience of recognizing stable tones attributable to music.” D.I. 182 at 11. Defendant also asserts that [t]he claimed process . . . mirrors the natural human perception of stable tones in music by listening for and separating musical tones from other noises.” *Id.* Yet, Defendant does not adequately explain why these purported facts support Defendant’s contention that the Challenged Claims are directed to “an algorithm to identify stable tones in a sound signal, which is an abstract idea.” D.I. 182 at 8; *see, e.g., Merida Delgado v. Gonzales*, 428 F.3d 916, 921 (10th Cir. 2005) (“Because Mr. Delgado has not supported these arguments with legal authority or argued that his ‘positions are sound despite a lack of supporting authority or in the face of contrary authority, ... we decline to consider these arguments.’”) (alterations in original); *United States v. Jones*, 744 F.3d 1362, 1370 n.2 (D.C. Cir. 2014) (“We decline to consider this issue, however, because Jones offers only ‘bare-bones arguments’

unsupported by any citations to legal authority.”); *Schaefer v. Universal Scaffolding & Equip., LLC*, 839 F.3d 599, 607 (7th Cir. 2016) (“Schaefer devotes only a scant paragraph to the issue. He cites no authority and simply asserts that the ill-fitting scaffolding components constitute a condition of the land. Perfunctory and undeveloped arguments are waived, as are arguments unsupported by legal authority.”); *see also* D.I. 43 ¶ 10 (“The Court will ignore any assertions of controverted facts and controverted legal principles not supported by a pinpoint citation to, as applicable: the record, an attachment or exhibit, and/or case law or appropriate legal authority.”).

Defendant asserts that “the ’073 [p]atent provides the exact equations by which ‘tonal stability’ can be calculated using pen and paper.” D.I. 182 at 11. This time, Defendant provides some legal support. According to Defendant, *see* D.I. 182 at 12, this purported fact is legally significant because *In re Killian* observed that “where the focus of the claimed advance over the prior art shows that the claim’s character as a whole is directed to steps that can be performed in the human mind, or by a human using a pen and paper the claim is for a patent-ineligible abstract idea.” 45 F.4th at 1379 (quotation marks omitted) (quoting *Affinity Labs*, 838 F.3d at 1257). *In re Killian*, however, made that observation when discussing that the Federal Circuit “ha[s] held that mental processes are abstract ideas under *Alice/Mayo* step one.” *Id.* at 1379.<sup>31</sup>

In this instance, Defendant has not explained how *In re Killian*’s observation on claims directed to mental processes supports Defendant’s proposed abstract idea. “It is not [the Court’s] responsibility, especially in a counseled case, to form [Defendant]’s arguments for [it] by researching the record and relevant case law.” *Lipton v. Cnty. of Orange, NY*, 315 F. Supp. 2d

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<sup>31</sup> “In the context of mental processes . . . [the Federal Circuit] ha[s] explained that if a claim’s steps ‘can be performed in the human mind, or by a human using a pen and paper,’ and the elements in the claim do not contain a sufficient inventive concept under *Alice/Mayo* step two, the claim is for a patent-ineligible abstract idea.” *Id.* at 1382; *see* 1 Carl Moy, *Moy’s Walker on Patents* § 5:28 (4th ed. Nov. 2023).

434, 440 n.3 (S.D.N.Y. 2004); *see, e.g., Jacobs v. City of Phila.*, No. 24-1696, 2025 WL 560626, at \*3 (3d Cir. Feb. 20, 2025) (nonprecedential) (“We do not consider undeveloped arguments.”); *ECB*, 2020 WL 5369076, at \*4 (“[C]ursory arguments not fully developed by the parties are waived.”); *Purewick Corp. v. Sage Prods., LLC*, 666 F. Supp. 3d 419, 441 (D. Del. 2023) (“[A]rguments . . . not squarely argued[] are considered [forfeited].”) (some alterations in original).

Moreover, at this stage, Defendant has not sufficiently distinguished the *Broadcom* case, which Plaintiff relies on. *See Redwood Techs.*, 2024 WL 4591852, at \*15. Putting aside that Defendant attempts to distinguish the *Broadcom* case in a footnote,<sup>32</sup> the Court is not convinced by Defendant’s contention that the *Broadcom* case is distinguishable because it involved cursory briefing. D.I. 187 at 3 n.1. Having considered the patent challengers’ opening brief in the *Broadcom* case, *see* 2021 U.S. FED. CIR. BRIEFS LEXIS 393, at \*45-49, the Court finds that the preceding brief is on par with Defendant’s briefing.

Having determined that Defendant has not carried its burden at *Alice* step one, the Court declines to discuss *Alice* step two. *See Contour IP Holding LLC v. GoPro, Inc.*, 113 F.4th 1373, 1378 (Fed. Cir. 2024) (“If the claims are not directed to an abstract idea, the *Alice* inquiry ends.”). Thus, with respect to the ’073 patent, Defendant’s Motion is denied without prejudice. Depending on how the record develops, or in this instance has already developed, Defendant may have another opportunity at the summary judgment stage to try to meet its burden at *Alice* step one. *See 3G Licensing, S.A. v. HTC Corp.*, No. CV 17-1646-LPS, 2019 WL 2904670, at \*2 (D. Del. July 5, 2019); *F45 Training Pty Ltd. v. Body Fit Training USA Inc.*, No. CV 20-1194-WCB, 2022 WL

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<sup>32</sup> *Cf. Game Play*, 2025 WL 26737, at \*1 n.1 (“The Court will not consider such footnotes, as ‘[a]rguments in footnotes are forfeited.’”) (alteration in original) (quoting 2024 WL 4723274, at \*4).

17177621, at \*6-7 (D. Del. Nov. 17, 2022), dismissed, No. 2023-1304, 2023 WL 2965590 (Fed. Cir. Apr. 17, 2023).

## **2. The Challenged Claims of the '741 Patent Withstand *Alice* Scrutiny**

According to Plaintiff, “[t]he inventions disclosed in the ’741 patent relate to ‘efficient interpolation of LP parameters between two frames at different internal sampling rates.’” D.I. 1 ¶ 75 (quoting ’741 patent, 7:41-43); *see id.* ¶ 78.

Defendant contends that the following claims the ’741 patent are invalid:

**1.** A method for encoding a sound signal, comprising: producing, in response to the sound signal, parameters for encoding the sound signal during successive sound signal processing frames, wherein the sound signal encoding parameters include linear predictive (LP) filter parameters, wherein producing the LP filter parameters comprises, when switching from a first one of the frames using an internal sampling rate S1 to a second one of the frames using an internal sampling rate S2, converting the LP filter parameters from the first frame from the internal sampling rate S1 to a the internal sampling rate S2, the and wherein converting the LP filter parameters from the first frame comprises:

computing, at the internal sampling rate S1, a power spectrum of a LP synthesis filter using the LP filter parameters;

modifying the power spectrum of the LP synthesis filter to convert it from the internal sampling rate S1 to the internal sampling rate S2;

inverse transforming the modified power spectrum of the LP synthesis filter to determine autocorrelations of the LP synthesis filter at the internal sampling rate S2; and using the autocorrelations to compute the LP filter parameters at the internal sampling rate S2; and

encoding the sound signal encoding parameters into a bitstream; and

wherein modifying the power spectrum of the LP synthesis filter to convert it from the internal sampling rate S1 to the internal sampling rate S2 comprises:

if S1 is less than S2, extending the power spectrum of the LP synthesis filter based on a ratio between S1 and S2;

if S1 is larger than S2, truncating the power spectrum of the LP synthesis filter based on the ratio between S1 and S2.

**2.** The method as recited in claim 1, wherein the frames are divided into subframes, and wherein the method comprises computing LP filter parameters in each subframe of a current frame by interpolating LP filter parameters of the current

frame at the internal sampling rate S2 with LP filter parameters of a past frame converted from the internal sampling rate S1 to the internal sampling rate S2.

5. The method as recited in claim 1, wherein the power spectrum of the LP synthesis filter is a discrete power spectrum.

6. The method as recited in claim 1, comprising:

- computing the power spectrum of the LP synthesis filter at K samples;
- extending the power spectrum of the LP synthesis filter to  $K(S2/S1)$  samples when the internal sampling rate S1 is less than the internal sampling rate S2; and

- truncating the power spectrum of the LP synthesis filter to  $K(S2/S1)$  samples when the sampling rate S1 is greater than the sampling rate S2.

7. The method as recited in claim 1, comprising computing the power spectrum of the LP synthesis filter as an energy of a frequency response of the LP synthesis filter.

8. The method as recited in claim 1, comprising inverse transforming the modified power spectrum of the LP synthesis filter by using an inverse discrete Fourier Transform.

10. A method for decoding a sound signal, comprising: receiving a bitstream including sound signal encoding parameters in successive sound signal processing frames, wherein the sound signal encoding parameters include linear predictive (LP) filter parameters:

- decoding from the bitstream the sound signal encoding parameters including the LP filter parameters during the successive sound signal processing frames, and producing from the decoded sound signal encoding parameters an LP synthesis filter excitation signal, wherein decoding the LP filter parameters comprises, when switching from a first one of the frames using an internal sampling rate S1 to a second one of the frames using an internal sampling rate S2, converting LP filter parameters from the first frame from the internal sampling rate S1 to the internal sampling rate S2, and wherein converting the LP filter parameters from the first frame comprises:

- computing, at the internal sampling rate S1, a power spectrum of a LP synthesis filter using the received LP filter parameters;

- modifying the power spectrum of the LP synthesis filter to convert it from the internal sampling rate S1 to the internal sampling rate S2;

- inverse transforming the modified power spectrum of the LP synthesis filter to determine autocorrelations of the LP synthesis filter at the internal sampling rate S2; and using the autocorrelations to compute the LP filter parameters at the internal sampling rate S2;

- synthesizing the sound signal using LP synthesis filtering in response to the decoded LP filter parameters and the LP synthesis filter excitation signal; and
- wherein modifying the power spectrum of the LP synthesis filter to convert it from the internal sampling rate S1 to the internal sampling rate S2 comprises:
- if S1 is less than S2, extending the power spectrum of the LP synthesis filter based on a ratio between S1 and S2;
  - if S1 is larger than S2, truncating the power spectrum of the LP synthesis filter based on the ratio between S1 and S2.
11. The method as recited in claim 10, wherein the frames are divided into subframes, and wherein the method comprises computing LP filter parameters in each subframe of a current frame by interpolating LP filter parameters of the current frame at the internal sampling rate S2 with LP filter parameters of a past frame converted from the internal sampling rate S1 to the internal sampling rate S2.
12. The method as recited in claim 10, wherein the power spectrum of the LP synthesis filter is a discrete power spectrum.
13. The method as recited in claim 10, comprising:
- computing the power spectrum of the LP synthesis filter at K samples;
  - extending the power spectrum of the LP synthesis filter to  $K(S2/S1)$  samples when the internal sampling rate S1 is less than the internal sampling rate S2; and
  - truncating the power spectrum of the LP synthesis filter to  $K(S2/S1)$  samples when the internal sampling rate S1 is greater than the internal sampling rate S2.
14. The method as recited in claim 10, comprising computing the power spectrum of the LP synthesis filter as an energy of a frequency response of the LP synthesis filter.
15. The method as recited in claim 10, comprising inverse transforming the modified power spectrum of the LP synthesis filter by using an inverse discrete Fourier Transform.
17. A device for encoding a sound signal, comprising:
- at least one processor; and
  - a memory coupled to the processor and comprising non-transitory instructions that when executed cause the processor to:
- produce, in response to the sound signal, parameters for encoding the sound signal during successive sound signal processing frames, wherein (a) the sound signal encoding parameters include linear predictive (LP) filter parameters, (b) for producing the LP filter parameters when switching from a first one of the frames using an internal sampling rate



- S1 to a second one of the frames using an internal sampling rate S2, the processor is configured to convert the LP filter parameters from the first frame from the internal sampling rate S1 to the internal sampling rate S2, and (c) for converting the LP filter parameters from the first frame, the processor is configured to:
- compute, at the internal sampling rate S1, a power spectrum of a LP synthesis filter using the LP filter parameters,
  - modify the power spectrum of the LP synthesis filter to convert it from the internal sampling rate S1 to the internal sampling rate S2,
  - inverse transform the modified power spectrum of the LP synthesis filter to determine autocorrelations of the LP synthesis filter at the internal sampling rate S2,
  - use the autocorrelations to compute the LP filter parameters at the internal sampling rate S2, and
  - encode the sound signal encoding parameters into a bitstream; and wherein the processor is configured to:
    - extend the power spectrum of the LP synthesis filter based on a ratio between S1 and S2 if S1 is less than S2; and
    - truncate the power spectrum of the LP synthesis filter based on the ratio between S1 and S2 if S1 is larger than S2.
- 18.** The device as recited in claim 17, wherein the frames are divided into subframes, and wherein the processor is configured to compute LP filter parameters in each subframe of a current frame by interpolating LP filter parameters of the current frame at the internal sampling rate S2 with LP filter parameters of a past frame converted from the internal sampling rate S1 to the internal sampling rate S2.
- 19.** The device as recited in claim 17, wherein the processor is configured to:
- compute the power spectrum of the LP synthesis filter at K samples;
  - extend the power spectrum of the LP synthesis filter to  $K(S2/S1)$  samples when the internal sampling rate S1 is less than the internal sampling rate S2; and
  - truncate the power spectrum of the LP synthesis filter to  $K(S2/S1)$  samples when the internal sampling rate S1 is greater than the internal sampling rate S2.
- 20.** The device as recited in claim 17, wherein the processor is configured to compute the power spectrum of the LP synthesis filter as an energy of a frequency response of the LP synthesis filter.
- 21.** The device as recited in claim 17, wherein the processor is configured to inverse transform the modified power spectrum of the LP synthesis filter by using an inverse discrete Fourier Transform.
- 22.** A device for decoding a sound signal, comprising:

- at least one processor; and
- a memory coupled to the processor and comprising non-transitory instructions that when executed cause the processor to:
  - receive a bitstream including sound signal encoding parameters in successive sound signal processing frames, wherein the sound signal encoding parameters include linear predictive (LP) filter parameters;
  - decode from the bitstream the sound signal encoding parameters including the LP filter parameters during the successive sound signal processing frames, and produce from the decoded sound signal encoding parameters an LP synthesis filter excitation signal, wherein (a) for decoding the LP filter parameters when switching from a first one of the frames using an internal sampling rate S1 to a second one of the frames using an internal sampling rate S2, the processor is configured to convert the LP filter parameters from the first frame from the internal sampling rate S1 to the internal sampling rate S2, and (b) for converting the LP filter parameters from the first frame, the processor is configured to:
    - compute, at the internal sampling rate S1, a power spectrum of a LP synthesis filter using the received LP filter parameters,
    - modify the power spectrum of the LP synthesis filter to convert it from the internal sampling rate S1 to the internal sampling rate S2,
    - inverse transform the modified power spectrum of the LP synthesis filter to determine autocorrelations of the LP synthesis filter at the internal sampling rate S2, and
    - use the autocorrelations to compute the LP filter parameters at the internal sampling rate S2, and
    - synthesize the sound signal using LP synthesis filtering in response to the decoded LP filter parameters and the LP synthesis filter excitation signal, and wherein the processor is configured to:
      - extend the power spectrum of the LP synthesis filter based on a ratio between S1 and S2 if S1 is less than S2; and
      - truncate the power spectrum of the LP synthesis filter based on the ratio between S1 and S2 if S1 is larger than S2.
- 23.** The device as recited in claim 22, wherein the frames are divided into subframes, and wherein the processor is configured to compute LP filter parameters in each subframe of a current frame by interpolating LP filter parameters of the current frame at the internal sampling rate S2 with LP filter parameters of a past frame converted from the internal sampling rate S1 to the internal sampling rate S2.
- 24.** The device as recited in claim 22, wherein the processor is configured to:
  - compute the power spectrum of the LP synthesis filter at K samples;

extend the power spectrum of the LP synthesis filter to  $K(S2/S1)$  samples when the internal sampling rate  $S1$  is less than the internal sampling rate  $S2$ ; and

truncate the power spectrum of the LP synthesis filter to  $K(S2/S1)$  samples when the internal sampling rate  $S1$  is greater than the internal sampling rate  $S2$ .

**25.** The device as recited in claim 22, wherein the processor is configured to compute the power spectrum of the LP synthesis filter as an energy of a frequency response of the LP synthesis filter.

**26.** The device as recited in claim 22, wherein the processor is configured to inverse [Transform<sup>33</sup>] the modified power spectrum of the LP synthesis filter by using an inverse discrete Fourier Transform.

'741 patent, 13:24-57 (claim 1), 13:58-64 (claim 2), 14:4-6 (claim 5), 14:7-15 (claim 6), 14:16-18 (claim 7), 14:19-21 (claim 8), 14:24-63 (claim 10), 14:64-15:3 (claim 11), 15:4-6 (claim 12), 15:7-16 (claim 13), 15:17-19 (claim 14), 15:20-22 (claim 15), 15:25-60 (claim 17), 15:61-67 (claim 18), 16:1-11 (claim 19), 16:12-15 (claim 20), 16:16-19 (claim 21), 16:20-62 (claim 22), 16:63-17:2 (claim 23), 17:3-12 (claim 24), 17:13-16 (claim 25), 17:17-20 (claim 26).

According to Defendant, “the asserted claims of the ’741 [p]atent . . . [are] directed to a method or generic device for converting parameters from one sample rate to another.” D.I. 182 at 14; *see id.* at 16 (“The asserted claims as a whole are directed to the abstract idea of converting signal parameters from one sampling rate to another using math.”); D.I. 187 at 3 (“The ’741 Patent claims are [] directed to an algorithm to convert (linear prediction, or ‘LP’) filter parameters from one sampling rate to another.”). Plaintiff disagrees. Plaintiff responds that “[t]he ’741 patent is directed to solving technical problems for encoding and decoding frames of a linear predictive coder with different sampling rates.” D.I. 185 at 16 (emphasis removed); *see id.* at 18 (“[T]he

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<sup>33</sup> *See* 2023 WL 356213, at \*2 (accepting parties’ stipulation).

'741 patent claims a specific solution to a technical problem that arises in multi-rate CELP coders that operate at different sampling rates.”).

As explained below, the Court finds that Defendant has not met its burden to prove the ineligibility of any of the '741 patent Challenged Claims.

**a. Alice Step One: The Court Accepts Defendant's Proposed Abstract Idea**

Defendant contends that “[t]he asserted claims [of the '741 patent] as a whole are directed to the abstract idea of converting signal parameters from one sampling rate to another using math.” D.I. 182 at 16. Plaintiff disagrees. Plaintiff responds that “[t]he '741 patent is directed to solving technical problems for encoding and decoding frames of a linear predictive coder with different sampling rates.” D.I. 185 at 16 (emphasis removed).

This Court has previously “agree[d]” that “[a]lthough courts ordinarily resolve step one before proceeding to step two, it is within a court’s discretion to skip straight to step two.” *Invitae Corp.*, 2021 WL 7209516, at \*5 (alteration in original) (quoting *Personalized Media Commc’ns, LLC v. Netflix Inc.*, 475 F. Supp. 3d 289, 298 (S.D.N.Y. 2020)).<sup>34</sup>

In this instance, “[g]iven [the Court’s] analysis of Step Two, which [the Court] will turn to in a moment, [the Court] need not and do[es] not decide today which party is correct at Step One.” *Invitae Corp.*, 2021 WL 7209516, at \*4. “Instead, [the Court] will assume, without deciding, that [Defendant] is correct that the '[741] claims are directed to the abstract idea [Defendant] has articulated.” *Id.* As explained below, “[e]ven granting [Defendant] that assumption, [Defendant]

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<sup>34</sup> See, e.g., *CosmoKey*, 15 F.4th at 1097 (“We need not answer this question [regarding *Alice* step one], however, because even if we accept the district court’s narrow characterization of the '903 patent claims, the claims satisfy *Alice* step two.”); *Sober-Eye Inc. v. Brightlamp, Inc.*, No. 20-CV-790-RGA, 2021 WL 7209366, at \*2 (D. Del. Dec. 10, 2021); *Peloton Interactive, Inc. v. Echelon Fitness, LLC*, No. 19-CV-1903-RGA, 2020 WL 3640064, at \*3 (D. Del. July 6, 2020).

has failed to persuade the Court that it should grant the pending motion for reasons [the Court will] discuss in a moment at Step Two.” *Id.* at \*5.

Having assumed that the ’741 patent claims are directed to abstract ideas, the Court “proceed[s] to step two, at which ‘we consider the elements of each claim both individually and as an ordered combination to determine whether the additional elements transform the nature of the claim into a patent-eligible application.’” *Beteiro*, 104 F.4th at 1355 (quoting 573 U.S. at 217).

**b. *Alice* Step Two: Defendant Has Not Established that the ’741 Patent Challenged Claims are Invalid**

“At *Alice* step two, the Court considers ‘two distinct questions: (1) whether each of the [elements] in the claimed [method/system] (apart from the [abstract ideas] themselves) involve well-understood, routine, conventional activity previously engaged in by researchers in the field, and (2) whether all of the [elements] ‘as an ordered combination add[ ] nothing to the [abstract idea] that is not already present when the [elements] are considered separately.’” *Redwood*, 2024 WL 4591852, at \*11 (some alterations in original) (quoting *Chamberlain Grp., Inc. v. Techtronic Indus. Co.*, 935 F.3d 1341, 1348-49 (Fed. Cir. 2019)). “[F]actual disputes about whether an aspect of the claims is inventive may preclude dismissal at the pleadings stage under § 101.” *Cellspin Soft, Inc. v. Fitbit, Inc.*, 927 F.3d 1306, 1318 (Fed. Cir. 2019).

Defendant’s contentions at *Alice* step two are as follows:

Here, just like the ’073 Patent, the claims do not provide any tangible improvement of patent-eligible subject matter. To start, the methods of claims 1, 2, 5-8, and 10-15 do not recite any tangible medium to perform the recited encoding/decoding; these steps can be performed using pen and paper. *Killian*, 45 F.4th at 1379.

But even for the “devices” of claims 17-26, the ’741 Patent explains that “the components, process operations, and/or data structures described herein may be implemented using ... *general purpose machines*.” ’741 Patent at 12:55-59; *see also id.* at Fig. 5 (showing only generic components of signal inputs and outputs, and a generic processor and memory). “[S]imply implementing a mathematical principle on a physical machine, namely a computer, [i]s not a patentable application of that principle.” *Alice*, 573 U.S. at 222 (citation omitted).

Accordingly, “the focus of the claims is not a physical-realm improvement but an improvement in wholly abstract ideas—the selection and mathematical analysis of information[.]” *SAP*, 898 F.3d at 1168; *Trading Techs. Int’l, Inc. v. IBG LLC*, 921 F.3d 1378, 1385 (Fed. Cir. 2019) (“The abstract idea itself cannot supply the inventive concept, no matter how groundbreaking the advance.”).

While VoiceAge may argue that the claimed mathematical processes improve the computer’s efficiency, *see, e.g.*, ’741 Patent at 2:58-60, that is not enough. “[M]erely calling for a mathematical concept to be performed more efficiently or with a particular input does not amount to an application of the mathematical concept that is patent-eligible.” *In re Gitlin*, 775 F. App’x 689, 691 (Fed. Cir. 2019); *see also Voit Techs., LLC v. Del-Ton, Inc.*, 757 F. App’x 1000, 1003-04 (Fed. Cir. 2019) (“[C]laims directed to improved speed or efficiency inherent with applying the abstract idea on a computer are insufficient to demonstrate an inventive concept.”) (quoting *Intell. Ventures I LLC v. Cap. One Bank (USA)*, 792 F.3d 1363, 1367 (Fed. Cir. 2015)); *Sensormatic*, 2021 WL 2944838, at \*3 (“[E]ncoding or decoding image data is abstract, even if for the purpose of transmitting files to devices with less memory or bandwidth or by transcoding data into multiple formats.”).

Thus, the ’741 Patent fails to provide an inventive concept to patent-eligible subject matter sufficient to render the claims as a whole patent-eligible.

D.I. 182 at 17-18 (alterations in original). In essence, Defendant contends that “there [is] nothing left to evaluate” at *Alice* step two. D.I. 187 at 9. Plaintiff disagrees.

One of Plaintiff’s counterpoints is that “HMD’s [M]otion fails because it applies the wrong standard.” D.I. 185 at 13 (citing *Huawei Techs., Co, Ltd v. Samsung Elecs. Co, Ltd.*, 340 F. Supp. 3d 934, 980 (N.D. Cal. 2018)); *see id.* at 19 (citing *Huawei Techs.*, 340 F. Supp. 3d at 980). Specifically, Plaintiff contends that Defendant fails to “consider the elements of each claim both individually and as an ordered combination to determine whether the additional elements transform the nature of the claim into a patent-eligible application.” D.I. 185 at 13; *see id.* at 19.

In this instance, the Court finds that Defendant’s *Alice* step two analysis is insufficient. Specifically, the Court agrees with Plaintiff that Defendant’s *Alice* step two analysis fails to adequately consider the elements of each claim both individually and as an ordered combination

to determine whether the additional elements transform the nature of the claim into a patent-eligible application.

To the extent that Defendant contends that certain claim elements should not be considered in the ordered combination analysis, *see* D.I. 187 at 9 (Defendant asserting that “there [is] nothing left to evaluate” at *Alice* step two), Defendant has provided insufficient legal support for that contention. The *Chamberlain* case instructs that the second distinct question of *Alice* step two involves considering all of the claim elements as an ordered combination. *Chamberlain Grp.*, 935 F.3d at 1348-49; *see Railware, Inc. v. Nat’l R.R. Passenger Corp.*, No. 22 CIV. 5013 (KPF), 2023 WL 5432860, at \*5 (S.D.N.Y. Aug. 23, 2023) (citing *Chamberlain Grp.*, 935 F.3d at 1349); *see also Emergency Alerts Innovations, LLC v. United States*, 174 Fed. Cl. 485, 498 (Ct. Cl. 2025) (“[S]tep two of the *Alice/Mayo* test also requires considering whether the ordered combination of all the individual claim elements of the ’826 Patent itself constitutes an innovative concept.”) (quotation marks omitted).<sup>35</sup>

“[T]he presumption of validity afforded to patents under § 282 applies equally to *all* grounds of validity, including the eligibility of the claimed subject-matter.” *Astellas*, 117 F.4th at 1378. Although *Alice* step two has been described as “like a lifeline[] [that] can rescue and save a claim,”<sup>36</sup> “[t]he burden to prove the ineligibility of any patent claim stays with the patent challenger

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<sup>35</sup> Moreover, the Federal Circuit has remarked that “[w]hether at step one or step two of the *Alice* test, in determining the patentability of a method, a court must look to the claims as an ordered combination, without ignoring the requirements of the individual steps.” *Kaavo Inc. v. Amazon.com Inc.*, 323 F. Supp. 3d 630, 636 (D. Del. 2018) (quoting *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299, 1313 (Fed. Cir. 2016)).

<sup>36</sup> *In re Bd. of Trs.*, 991 F.3d at 1251; *see AI Visualize, Inc. v. Nuance Commc’ns, Inc.*, 97 F.4th 1371, 1379 (Fed. Cir. 2024) (“To survive at *Alice* step two . . .”).

at all times,” *Mobile Acuity*, 110 F.4th at 1291, even at *Alice* step two.<sup>37</sup> Thus, the patent challenger must “meet their burden of clear and convincing evidence at step 2 of *Alice*.” *Sunoco Partners Mktg. & Terminals L.P. v. Powder Springs Logistics, LLC*, No. CV 17-1390-LPS-CJB, 2020 WL 1527321, at \*2 (D. Del. Mar. 31, 2020).

At this stage, “[e]ven assuming, arguendo, that the ’[741] [p]atent [claims] [are] directed to an abstract idea, the [Court] concludes that . . . [D]efendant has not met its burden of establishing that the elements of the ’[741] [p]atent [claims], alone *or in combination*, do not contain an ‘inventive concept’ sufficient to ‘transform the nature of the claim[s]’ from a purported abstract idea into a patent-eligible application.” *Vineyard Investigations v. E. & J. Gallo Winery*, 510 F. Supp. 3d 926, 941 (E.D. Cal. 2021) (quoting *Alice*, 573 U.S. at 221). Thus, with respect to the ’741 patent, Defendant’s Motion is denied without prejudice. Depending on how the record develops, or in this instance has already developed, Defendant may have another opportunity at the summary judgment stage to try to meet its burden at *Alice* step two. See *3G Licensing*, 2019 WL 2904670, at \*2; *F45 Training*, 2022 WL 17177621, at \*6-7.

#### IV. CONCLUSION

For the above reasons, the Court DENIES Defendant’s Motion. The Court will enter an Order consistent with this Memorandum Opinion.

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<sup>37</sup> See, e.g., *GREE, Inc. v. Supercell Oy*, 834 F. App’x 583, 589 (Fed. Cir. 2020) (nonprecedential) (“We thus agree with the Board that Supercell has not shown these claims to lack an inventive concept under *Alice* step two[.]”); *Sycamore IP Holdings LLC v. AT & T Corp.*, 294 F. Supp. 3d 620, 653-54 (E.D. Tex. 2018) (Bryson, J.) (“Even if the asserted claims of the ’405 patent are regarded as directed to an abstract idea, . . . the defendants must establish that the claims fail step two of the section 101 analysis.”), *aff’d*, 773 F. App’x 624 (Fed. Cir. 2019); *Pac. Biosciences of California, Inc. v. Oxford Nanopore Techs., Inc.*, No. CV 17-1353-LPS, 2018 WL 1419082, at \*8 (D. Del. Mar. 22, 2018) (“[T]he Court finds that Oxford has not met its burden at step two.”).



IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE

VOICEAGE EVS LLC,

Plaintiff,

v.

HMD GLOBAL OY,

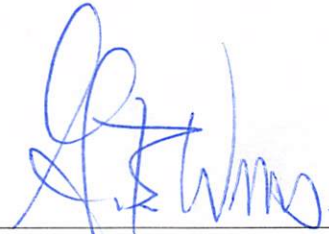
Defendant.

Civil Action No. 19-1945-GBW

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**ORDER**

At Wilmington this 14th day of May, 2025, **IT IS HEREBY ORDERED** that Defendant HMD Global Oy's Motion for Judgment on the Pleadings (D.I. 181) is **DENIED**.



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GREGORY B. WILLIAMS  
UNITED STATES DISTRICT JUDGE