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Paper 13
Entered: November 17, 2023

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG BIOEPIS CO., LTD.,
Petitioner,

v.

REGENERON PHARMACEUTICALS, INC.,
Patent Owner.

IPR2023-00884
Patent 11,253,572 B2

Before SUSAN L. C. MITCHELL, ROBERT A. POLLOCK, and RYAN H. FLAX, *Administrative Patent Judges*.

FLAX, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

Regeneron Pharmaceuticals, Inc. ("Patent Owner") is the owner of U.S. Patent 11,253,572 B2 ("the '572 patent"). Paper 5, 1. On April 27, 2023, Samsung Bioepis Co., Ltd. ("Petitioner") filed a Petition for *inter partes* review challenging the patentability of claims 1–30 (all claims) of the '572 patent. Paper 2, 1 ("Pet."). On August 25, 2023, Patent Owner filed a Preliminary Response to the Petition. Paper 7 ("Prelim. Resp."). With our authorization (*see* Ex. 3001), Petitioner filed a Reply to the Preliminary Response to address the issue of the priority date to be accorded the '572 patent as it relates to asserted references, and Patent Owner filed a respective Sur-Reply.

Under 37 C.F.R. § 42.4(a), we have authority to determine whether to institute trial in an *inter partes* review. We may institute an *inter partes* review if the information presented in the petition filed under 35 U.S.C. § 311, and any preliminary response filed under § 313, shows that there is a reasonable likelihood that Petitioner would prevail with respect to at least one of the claims challenged in the petition. 35 U.S.C. § 314.

After reviewing the parties' submissions in view of the preliminary record, we conclude Petitioner demonstrates a reasonable likelihood it would prevail in showing that at least one challenged claim of the '572 patent is unpatentable under the presented grounds. Therefore, we grant institution of *inter partes* review. We note that there are disputed issues in this proceeding under 35 U.S.C. § 325(d) and § 314(a) concerning discretionary denial; however, we determine institution should be not be denied. *See* Pet. 63–68; Prelim. Resp. 49–62. Our reasoning is discussed below.

A. REAL PARTIES-IN-INTEREST

Each party identifies only itself as a real party-in-interest. Pet. 6; Paper 3, 1.

B. RELATED MATTERS

Petitioner identifies the following regarding related matters: IPR2022-01524 concerning the '572 patent (institution denied); IPR2021-00881 concerning U.S. Patent 9,254,338; IPR2021-00880 concerning U.S. Patent 9,669,069; IPR2022-01225 concerning U.S. Patent 10,130,681; IPR2023-00442 also concerning U.S. Patent 10,130,681; IPR2022-01226 concerning U.S. Patent 10,888,601, to which IPR2023-00566 is joined; IPR2023-00739 also concerning U.S. Patent 10,888,601; *Regeneron Pharmaceuticals, Inc. v. Mylan Pharmaceuticals Inc.*, NDWV-1-22-cv-00061 (NDWV); and *United States v. Regeneron Pharms., Inc.*, No. 1:20-cv-11217-FDS (D. Mass.).

Patent Owner identifies the same matters and adds: IPR2023-00532 also concerning U.S. Patent 10,130,681; IPR2022-00257 and IPR2022-00301 joined with IPR2021-00880; IPR2022-00258 and IPR2022-00298 joined with IPR2021-00881; PGR2021-00035 concerning U.S. Patent 10,828,345; and appeals to the U.S. Court of Appeals for the Federal Circuit ("Fed. Cir." or "Federal Circuit") from the Board's final decisions in IPR2021-00880 and IPR2021-00881 in *Regeneron Pharmaceuticals, Inc. v. Mylan Pharmaceuticals Inc.*, No. 2023-1395, and *Regeneron Pharmaceuticals, Inc. v. Mylan Pharmaceuticals Inc.*, No. 2023-1396. Paper 3, 1–2.

Regarding the above-noted district court litigation, *Regeneron Pharmaceuticals, Inc. v. Mylan Pharmaceuticals Inc.*, NDWV-1-22-cv-

00061, the evidence of record indicates, *inter alia*: (1) Petitioner is not a party to this litigation; (2) on April 19, 2023, the District Court entered an Order on Claim Construction (discussed *infra* Section II.B); (3) on April 27, 2023, Patent Owner expressly stipulated to, *inter alia*, the invalidity of the '572 patent's claims 1–5, 8–11, 14, and 26–28, reserving rights to appeal; and (4) a bench trial was held and all briefing, closing arguments, and post-trial briefing is concluded. Ex. 1063 (Order on Claim Construction); Ex. 2003 (Bench Trial Transcript); Ex. 2031 (Stipulation); Ex. 2032 (post-trial brief); Prelim. Resp. 10–12. Patent Owner states that the parties now "await the [D]istrict [C]ourt's judgment," and "[a]n expedited appeal is likely to follow." Prelim. Resp. 11–12 (citing Ex. 2031; Ex. 2033; Ex. 2034, 20:11–19).

C. THE '572 PATENT

The '572 patent issued on February 22, 2022, from U.S. Application 17/352,892, which was filed on June 21, 2021. Ex. 1001, codes (45), (21), (22). The '572 patent ultimately indicates priority to U.S. Provisional Application 61/432,245, filed on January 13, 2011. *Id.* at code (60), 1:7–29. However, priority is an issue raised by the parties in this proceeding and we discuss the matter below at Section II.C.

The '572 patent's abstract states:

> The present invention provides methods for treating angiogenic eye disorders by sequentially administering multiple doses of a VEGF antagonist to a patient. The methods of the present invention include the administration of multiple doses of a VEGF antagonist to a patient at a frequency of once every 8 or more weeks. The methods of the present invention are useful for the treatment of angiogenic eye disorders such as age related macular degeneration, diabetic retinopathy, diabetic macular

> edema, central retinal vein occlusion, branch retinal vein occlusion, and corneal neovascularization.

Id. at Abstract.

As background, the '572 patent states that "[r]elease of vascular endothelial growth factor (VEGF) contributes to increased vascular permeability in the eye and inappropriate new vessel growth," and "inhibiting the angiogenic-promoting properties of VEGF appears to be an effective strategy for treating angiogenic eye disorders." *Id.* at 1:60–65. As further background, the '572 patent identifies that "FDA-approved treatments of angiogenic eye disorders such as AMD and CRVO include the administration of an anti-VEGF antibody called ranibizumab (Lucentis®, Genentech, Inc.) on a monthly basis by intravitreal injection." *Id.* at 1:66–2:2. The '572 patent indicates that its invention is a response to the need for "new administration regimes" of "less frequent dosing while maintaining a high level of efficacy." *Id.* at 2:6–9.

In summarizing its invention, the '572 patent states:

> The present inventors have surprisingly discovered that beneficial therapeutic effects can be achieved in patients suffering from angiogenic eye disorders by administering a VEGF antagonist to a patient at a frequency of once every 8 or more weeks, especially when such doses are preceded by about three doses administered to the patient at a frequency of about 2 to 4 weeks. Thus, according to the methods of the present invention, each secondary dose of VEGF antagonist is administered 2 to 4 weeks after the immediately preceding dose, and each tertiary dose is administered at least 8 weeks after the immediately preceding dose.

Id. at 2:22–33. The '572 patent defines certain terms relevant to the above passage. The Specification states, for example, that "the VEGF antagonist comprises one or more VEGF receptor-based chimeric molecule(s), (also

referred to herein as a 'VEGF-Trap' or 'VEGFT')," and that an exemplary VEGF antagonist includes "aflibercept," marketed as "EYLEA" by Regeneron Pharmaceuticals, Inc. and approved by the FDA in November 2011, at a dose of 2 mg via intravitreal injection every 4 weeks for three months and then every 8 weeks. *Id.* at 2:47–67.

Regarding a dosing regimen, the '572 patent further defines the terms (ultimately used in the claims) "initial dose, "secondary doses," and "tertiary doses" as follows:

> the "initial dose" is the dose which is administered at the beginning of the treatment regimen (also referred to as the "baseline dose"); the "secondary doses" are the doses which are administered after the initial dose; and the "tertiary doses" are the doses which are administered after the secondary doses.

Id. at 3:51–58. As discussed below at Section II.B.1, we interpret these terms in accordance with these express definitions in the Specification.

The '572 patent describes a series of Examples detailing clinical trials conducted to validate the VEGFT drug and the dosing regimen. *Id.* at 8:12–18:3. Example 4 details two "Phase III Clinical Trials of the Efficacy, Safety, and Tolerability of Repeated Doses of Intravitreal VEGFT in Subjects with Neovascular Age-Related Macular Degeneration" (AMD) (Study 1 and Study 2), which employed a dosing regimen for aflibercept comprising an initial 2 mg dose, followed by two 4-week doses, and then additional doses every 8-weeks through the end of the 52-week study (the "2Q8" regimen). *Id.* at 9:29–14:30. The results of this and other regimens were compared to subjects administered 0.5 mg ranibizumab every 4 weeks (the "RQ4" regimen) by assessing patients' visual acuity based on a Best Corrected Visual Acuity (BCVA) test, which is based on the ability to identify letters. *Id.* at 9:35–10:7. This disclosure describes the inclusion

criteria and exclusion criteria for the participating patients. *Id.* at 10:50–12:22.

Results of the Example 4 clinical trials are described in TABLE 1, which we reproduce below:

TABLE 1

	Ranibizumab 0.5 mg monthly (RQ4)	VEGFT 0.5 mg monthly (0.5Q4)	VEGFT 2 mg monthly (2Q4)	VEGFT 2 mg every 8 weeks[a] (2Q8)
Maintenance of vision* (% patients losing <15 letters) at week 52 versus baseline				
Study 1	94.4%	95.9%**	95.1%**	95.1%**
Study 2	94.4%	96.3%**	95.6%**	95.5%**
Mean improvement in vision* (letters) at 52 weeks versus baseline (p-value vs RQ4)***				
Study 1	8.1	6.9 (NS)	10.9 (p <0.01)	7.9 (NS)
Study 2	9.4	9.7 (NS)	7.6 (NS)	8.9 (NS

[a]Following three initial monthly doses
*Visual acuity was measured as the total number of letters read correctly on the Early Treatment Diabetic Retinopathy Study (ETDRS) eye chart.
**Statistically non-inferior based on a non-inferiority margin of 10%, using confidence interval approach (95.1% and 95% for Study 1 and Study 2, respectively)
***Test for superiority
NS = non-significant

Id. at 13:9–27. According to the '572 patent, these results showed that the VEGFT therapies usually maintained or improved visual acuity in patients and were not inferior to the ranibizumab treatment based on similar criteria. *Id.* at 13:28–38.

As Example 5, the '572 patent describes a Phase 2 clinical trial using the same drug, also administered at 2 mg doses and, in one arm of the trial, at a regimen of three initial doses every four weeks followed by doses every eight weeks, but treating patients with diabetic macular edema (DME). *Id.*

at 14:32–15:5. The '572 patent describes that visual acuity in this trial was maintained or improved for all VEGFT study groups. *Id.*

The '572 patent concludes with 30 claims, of which claims 1, 15, 26, and 29 are independent claims. Ex. 1001, 23:2–25:5. Claim 1 is illustrative:

> 1. A method of treating an angiogenic eye disorder in a patient in need thereof comprising sequentially administering to the patient by intravitreal injection a single initial dose of 2 mg of aflibercept, followed by one or more secondary doses of 2 mg of aflibercept, followed by one or more tertiary doses of 2 mg of aflibercept;
>
> wherein each secondary dose is administered approximately 4 weeks following the immediately preceding dose; and
>
> wherein each tertiary dose is administered approximately 8 weeks following the immediately preceding dose;
>
> wherein the patient achieves a gain in visual acuity within 52 weeks following the initial dose.

Ex. 1001, 23:2–14.

Independent claim 15 is similar to claim 1 in reciting the same drug, dose, and dosing regimen, but is directed to "treating diabetic macular edema" (DME) and does not include any language directed to results. *Id.* at 23:53–64.

Independent claim 26 is also similar to claim 1 in reciting the same drug, dose, and regimen, but adds that the method treats "age related macular degeneration" (AMD) and that "the method is as effective in achieving a gain in visual acuity as monthly administration of 0.5 mg of ranibizumab by intravitreal injection in human subjects with age-related macular degeneration at 52 weeks following the initial dose." *Id.* at 24:26–44.

Independent claim 29 is also similar to claim 1, and is essentially the same as claim 26, but differs in requiring effectiveness in "maintaining visual acuity" rather than a *gain* therein. *Id.* at 24:50–67.

D. ASSERTED GROUNDS FOR UNPATENTABILITY

Petitioner asserts the following grounds for the unpatentability of claims 1–30 of the '572 patent:

Ground	Claims Challenged	35 U.S.C. §[1]	Reference(s)/Basis
1	15, 24	102(a)	2009 PR[2] ***or*** Dec. 2010 PR,[3] individually
2	1–5, 8–11, 16, 17, 20, 21	102(a)	Dec. 2010 PR
3	26–30	102(a)	Nov. 2010 PR[4]

[1] The parties contest the priority date to be accorded the '572 patent; however, as explained herein, we agree with Patent Owner that all claims should be accorded at least a January 21, 2011, priority date, which is before the AIA revisions to 35 U.S.C. §§ 102 and 103 took effect on March 16, 2013. 35 U.S.C. § 100 (note). Therefore, pre-AIA § 102 and § 103 apply.

[2] Regeneron, Enrollment Completed in Regeneron and Bayer HealthCare Phase 3 Studies of VEGF Trap-Eye in Neovascular Age-Related Macular Degeneration (Wet AMD) (Sept. 14, 2009) (Ex. 1005, "2009 PR").

[3] Regeneron, Regeneron and Bayer Report Positive Results for VEGF Trap-Eye in Phase 3 Study in Central Retinal Vein Occlusion (CRVO) and in Phase 2 Study in Diabetic Macular Edema (DME) (Dec. 20, 2010) (Ex. 1006, "Dec. 2010 PR").

[4] Regeneron, Bayer and Regeneron Report Positive Top-Line Results of Two Phase 3 Studies with VEGF Trap-Eye in Wet Age-related Macular Degeneration (Nov. 22, 2010) (Ex. 1007, "Nov. 2010 PR").

Ground	Claims Challenged	35 U.S.C. §[1]	Reference(s)/Basis
4	1–5, 8–11, 26–30	103(a)	Dixon,[5] 2006 PR[6]
5	16, 17, 20, 21	103(a)	2009 PR, 2007 ARVO,[7] Dixon, 2010 ARVO[8]
6	6, 7, 12, 13	103(a)	Dixon, Hecht,[9] 2006 PR, Dec. 2010 PR
7	18, 19, 22, 23	103(a)	Dec. 2010 PR, Hecht, 2009 PR, 2007 ARVO, Dixon, 2010 ARVO
8	14	103(a)	Dixon, Dec. 2010 PR, CATT,[10] PIER,
9	25	103(a)	2009 PR, Shams,[11]

[5] James A. Dixon et al., *VEGF Trap-Eye for the treatment of neovascular age-related macular degeneration*, 18(10) EXPERT OPIN. INVESTIG. DRUGS 1573–80 (2009) (Ex. 1009, "Dixon").

[6] Regeneron Pharm., Regeneron Reports Positive Phase 1 Data for the VEGF Trap in Age-Related Macular Degeneration, Preliminary results show improvements in vision and retinal swelling, VEGF Trap was well tolerated at all dose levels, Company also announces initiation of phase 2 trial (May 1, 2006) (Ex. 1027, "2006 PR").

[7] D.V. Do et al., ARVO Annual Meeting Abstract, *Results of a Phase I Study of Intravitreal VEGF Trap in Subjects with Diabetic Macular Edema: The CLEAR-IT DME Study*, 48 Investigative Ophthalmology & Visual Sci. 1430 (May 2007) (Ex. 1030, "2007 ARVO").

[8] J.C. Major, Jr. & D.M. Brown, ARVO Annual Meeting Abstract, *DA VINCI: DME and VEGF Trap-Eye: Investigation of Clinical Impact: Phase 2 Study in Patients with Diabetic Macular Edema (DME)*, 51 Investigative Ophthalmology & Visual Sci. 6426 (April 2010) (Ex. 1010, "2010 ARVO").

[9] Gerald Hecht, PhD, *Ophthalmic Preparations*, in II REMINGTON: THE SCIENCE AND PRACTICE OF PHARMACY, 19th ed., Ch. 89, 1563–76 (Alfonso R. Gennaro ed., 1995) (Ex. 1016, "Hecht").

[10] CATT and PIER refer to clinical trials conceming ranibizumab and bevacizumab, and are described in the Petition as encompassing Exhibits 1020–1026.

[11] WO 2006/047325 A1 (published May 4, 2006) (Ex. 1017, "Shams").

Ground	Claims Challenged	35 U.S.C. §[1]	Reference(s)/Basis
			Elman 2010[12]
10	1–5, 8–11, 26–30	102(a)	Dixon
11	1–5, 8–11, 26–30	102(a)	2009 PR

See Pet. 11–13.

In support of these grounds for unpatentability Petitioner submits, *inter alia*, the Declaration of Edward Chaum, MD. Ex. 1002. Patent Owner submits, *inter alia*, the Declaration of Richard Manning, PhD, both in public-redacted form and in confidential-sealed form. Ex. 2001. In the absence of evidence to the contrary, we find on the record before us that Drs. Chaum and Manning are competent to testify on the subject matter of their declarations. *See* Ex. 1002 ¶¶ 5–13, 22–25; Ex. 1003; Ex. 1003; Ex. 2001 ¶¶ 1–11, CV (at pages 139–150). Dr. Manning indicates he was retained by Patent Owner to "testify concerning commercial success," a topic about which we find no argument in the Preliminary Response. Ex. 2001 ¶ 9; *see generally* Prelim. Resp.

II. DISCUSSION

Patent Owner describes Petitioner as taking a "kitchen sink approach" to the asserted unpatentability grounds, which we understand to be an argument that Petitioner is overly inclusive. Prelim. Resp. 20. As listed and summarized above and in the Petition, Petitioner has expressly numbered eleven separate grounds for its unpatentability challenges. *See supra* Section I.D; *see also* Pet. 11–13. However, depending upon how one interprets

[12] Michael J. Elman et al., Randomized Trial Evaluating Ranibizumab Plus Prompt or Deferred Laser or Triamcinolone Plus Prompt Laser for Diabetic Macular Edema, 117(6) OPHTHALMOLOGY 1064–77 (June 2010) (Ex. 1018, "Elman 2010").

Petitioner's challenges, there are potentially many more asserted unpatentability grounds because the Petition includes prior art assertions in the alternative (e.g., anticipation by one reference *or* another) and reference combinations in the alternative (e.g., obviousness over one reference individually *or* in view of another or several others) and, more than once, includes "and/or" conjunctions when listing proposed reference combinations asserted against claims (e.g., obviousness over one reference in view of one or several others *and/or* another reference, or references, on occasion merely incorporated by reference from other grounds).

By statute, petitions for *inter partes* review are required to identify "with particularity, each claim challenged, the grounds on which the challenge to each claim is based, and the evidence that supports the grounds for the challenge to each claim." 35 U.S.C. § 312(a)(3); *see also* 37 C.F.R. § 42.104(b) (specifying necessary elements of a petition). Consistent with such requirements, the Board's *Trial Practice Guide* advises that petitioners should "avoid submitting a repository of all the information that a judge could possibly consider, and instead focus on concise, well-organized, easy-to-follow arguments supported by readily identifiable evidence of record." *Consolidated Trial Practice Guide* (Nov. 2019), at 39 ("CTPG").[13]

The particularity requirement is "of the utmost importance" because a detailed and clear explanation of the challenge at the outset is necessary to complete the trial within the statutorily prescribed time frame. *Intelligent Bio-Systems, Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1369 (Fed. Cir. 2016). Moreover, as explained in *Adaptics,* the "all-or-nothing" nature of

[13] Available at www.uspto.gov/sites/default/files/documents/tpgnov.pdf.

institution decisions following *SAS Institute Inc. v. Iancu*, 138 S.Ct. 1348 (2018),[14] gives heightened importance to the statutory requirement for particularity in an IPR petition. *Adaptics Limited v. Perfect Co.*, IPR2018-01596, Paper 20, at 17–18 (PTAB Mar. 6, 2019) (informative) (quoting *SAS Q&As* (June 5, 2018), at Part D, Question D2).[15]

The petition at issue in *Adaptics* asserted ten prior art references against nine patent claims in five grounds, two of which were for anticipation and three for obviousness. *Id.* at 2, 6, 8–9. The three numbered obviousness grounds, however, relied on "up to ten references connected by the conjunction 'and/or,'" which made the challenge unclear and resulted in "a multiplicity of grounds" that were "voluminous and excessive." *Id.* at 18–21. Accordingly, the Board denied institution because the petition's "lack of particularity . . . result[ed] in voluminous and excessive grounds." *Id.* at 18, 24.

Following *Adaptics*, the Board has consistently denied petitions that asserted inordinately large numbers of ambiguous grounds. *See*, *e.g.*, *EnergySource Minerals, LLC v. TerraLithium LLC*, IPR2019-01607, Paper 10 (PTAB May 4, 2020) (denying institution where the use of "and/or" in listing the references applied under obviousness grounds in the petition led to voluminous, excessive, and ambiguous grounds); *Sinjimoru v. Geneze*

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[14] *See SAS*, 138 S.Ct. at 1355 (holding that under § 314, the Board has "a binary choice—either institute review or don't"); *see also* CTPG at 64 ("In instituting a trial, the Board will either (1) institute as to all claims challenged in the petition and on all grounds in the petition, or (2) institute on no claims and deny institution.").

[15] Available at www.uspto.gov/sites/default/files/documents/sas_qas_20180605.pdf.

Innovation Inc., IPR2021-00493, Paper 8 (PTAB July 28, 2021) (denying institution where the petition purported to present 32 grounds, but, because many of those grounds asserted multiple statutory bases and multiple combinations of references, the petition actually advanced 205 different grounds); *Playtika Ltd. and Playtika Holding Corp. v. NexRF Corp.*, IPR2021-00952, Paper 14, at 11, 12 (PTAB Nov. 6, 2021) (denying institution where the petition "challenges ten claims by combining eight references in various permutations to arrive at 96 grounds" and where the grounds are unclear because petitioner "lumps together the discussion of large numbers of grounds under a single heading" thereby obscuring the specific arguments advanced); IPR2023-00738, *Uber Technologies, Inc. et al. v. Surgetech, LLC*, Paper 8 (PTAB Oct. 23, 2023) (denying institution where the petition lumped together multiple grounds into a single claim chart that identified every prior art reference teaching any claim element and, arguably, asserted thousands of possible unpatentability grounds).

The Petition here poses some of the same challenges found to be a reason to deny institution in other cases before the Board. As noted above, there are potentially many more than the eleven numbered grounds asserted for unpatentability and the style and wording of some of Petitioner's grounds suggest a questionable ambiguity in the Petition. Despite this potential infirmity, however, we find good reasons to institute trial here.

First, as discussed in detail below, we find that certain of Petitioner's grounds present compelling merits for the unpatentability of at least some challenged claims.

Second, and importantly, Patent Owner identifies Petitioner's "kitchen sink approach," but does *not* argue that this should be a basis for denying

institution. *See generally* Prelim. Resp. If Patent Owner does not anticipate it will be overly burdened in presenting a full defense against the challenges in the Petition, we will likewise undertake entering a final decision in this matter.

Therefore, we interpret Petitioner's grounds in a manner so that we may reasonably deal with each and all of the unpatentability challenges. We will follow Petitioner's express listing of grounds and include thereunder, respectively, any and all references listed under each numbered ground. For any proposed combination of prior art listed in the Petition's summary of Grounds of Challenge we interpret the asserted prior art combination to include every reference listed under the numbered obviousness ground. For example, under Petitioner's Ground V (5), we interpret the proposed combination of references to include 2009 PR, 2007 ARVO, Dixon, and 2010 ARVO because each is listed under this Ground. If, under our final analysis in view of a complete trial record, certain references are found to be unnecessary to render a final decision on a challenge of unpatentability, or if certain references are shown to not be prior art (as presently asserted by Patent Owner), we will so note it in our final decision, as necessary.

Any other manner of interpreting Petitioner's obviousness grounds would render the Petition overly ambiguous and too unwieldy to institute trial. If, upon considering this and our analysis in this Institution Decision, Petitioner determines that certain grounds for unpatentability are no longer necessary to its case or do not require a final decision, we encourage Petitioner to *expressly* abandon such challenges at trial.

A. LEVEL OF ORDINARY SKILL IN THE ART

In determining the level of ordinary skill in the art, we consider the types of problems encountered in the art, the prior art solutions to those problems, the rapidity with which innovations are made, the sophistication of the technology, and the educational level of active workers in the field. *Custom Accs., Inc. v. Jeffrey-Allan Indus., Inc.*, 807 F.2d 955, 962 (Fed. Cir. 1986).

Petitioner asserts that the level of ordinary skill in the art should be defined here consistent with related IPR2021-00881 concerning U.S. Patent 9,254,338 and IPR2022-01226 concerning U.S. Patent 10,888,601, as follows:

> A POSA here would have: (1) knowledge regarding the diagnosis and treatment of angiogenic eye disorders, including the administration of therapies to treat said disorders; and (2) the ability to understand results and findings presented or published by others in the field, including the publications discussed herein. Typically, such a person would have an advanced degree, such as an M.D. or Ph.D. (or equivalent, or less education but considerable professional experience in the medical, biotechnological, or pharmaceutical field), with practical academic or medical experience in (i) developing treatments for angiogenic eye disorders (such as AMD), including through the use of VEGF antagonists, or (ii) treating of same, including through the use of VEGF antagonists.

Pet. 16–17 (citing Ex. 1002 ¶¶ 22–25). This is also consistent with the proposed and adopted definition in IPR2022-01524. Patent Owner expressly adopts this proposed definition of the ordinarily skilled artisan for the purposes of this proceeding (at this point). Prelim. Resp. 13.[16]

[16] The parties use the acronym "POSA" to refer to the ordinarily skilled artisan. Prelim. Resp. 13; *see also* Pet. 40 (for example).

For the purposes of this Decision, we accept Petitioner's proposed definition of the person of ordinary skill in the art (or ordinarily skilled artisan), which appears to be consistent with the level of skill in the art reflected in the prior art of record and the disclosure of the '572 patent. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) ("the prior art itself [may] reflect[]" evidence of the ordinary level of skill in the art) (quoting *Litton Indus. Prods., Inc. v. Solid State Sys. Corp.*, 755 F.2d 158, 163 (Fed. Cir. 1985)).

B. CLAIM CONSTRUCTION

The Board interprets claim terms in an *inter partes* review using the same claim construction standard used to construe claims in a civil action in federal district court. 37 C.F.R. § 42.100(b). In construing claims, district courts and the Board here, by default, give claim terms their ordinary and customary meaning, which is "the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc).

Should claim terms require express construction, sources for claim interpretation include "the words of the claims themselves, the remainder of the specification, the prosecution history[, i.e., the intrinsic evidence], and extrinsic evidence concerning relevant scientific principles, the meaning of technical terms, and the state of the art." *Id.* at 1314 (quoting *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1116 (Fed. Cir. 2004)). "[T]he claims themselves [may] provide substantial guidance as to the meaning of particular claim terms." *Id.* However, the claims "do not stand alone," but are part of "'a fully integrated written instrument' . . . consisting principally of a specification that concludes with the claims," and,

therefore, the claims are "read in view of the specification." *Id.* at 1315 (quoting *Markman v. Westview Insts., Inc.*, 52 F.3d 967, 978–79 (Fed. Cir. 1995) (en banc)). Any special definition for a claim term must be set forth in the specification "with reasonable clarity, deliberateness, and precision." *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994). Without such a special definition, however, limitations may not be read from the specification into the claims. *In re Van Geuns*, 988 F.2d 1181, 1184 (Fed. Cir. 1993).

"[W]e need only construe terms 'that are in controversy, and only to the extent necessary to resolve the controversy.'" *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

1. "initial dose," "secondary doses," and "tertiary doses"

Although neither party requests such express interpretation, for the sake of consistency with our decision denying institution in IPR2022-01524, we repeat the following interpretations for claim language expressly defined in the '572 patent's Specification.

One or all of the terms "initial dose," "secondary doses," and "tertiary doses," are included in every claim. *See* Ex. 1001, 23:1–25:5 (claims). The '572 patent expressly defines the claim terms "initial dose," "secondary doses," and "tertiary doses," in its Specification, as follows:

> The terms "initial dose," "secondary doses," and "tertiary doses," refer to the temporal sequence of administration of the VEGF antagonist. Thus, the "initial dose" is the dose which is administered at the beginning of the treatment regimen (also referred to as the "baseline dose"); the "secondary doses" are the doses which are administered after the initial dose; and the "tertiary doses" are the doses which are administered after the secondary doses. The initial, secondary, and tertiary doses may

> all contain the same amount of VEGF antagonist, but will generally differ from one another in terms of frequency of administration. In certain embodiments, however, the amount of VEGF antagonist contained in the initial, secondary and/or tertiary doses will vary from one another (e.g., adjusted up or down as appropriate) during the course of treatment.

Pet. 16 (quoting Ex. 1001, 3:51–65; citing Ex. 1002 ¶ 62).

"When the specification explains and defines a term used in the claims, without ambiguity or incompleteness, there is no need to search further for the meaning of the term." *Multiform Dessicants Inc. v. Medzam Ltd.*, 133 F.3d 1473, 1478 (Fed. Cir. 1998).

The Specification of the '572 patent expressly and unequivocally defines the claim terms "initial dose," "secondary doses," and "tertiary doses," as set forth in the quote above, as meaning, respectively, (1) *the dose which is administered at the beginning of the treatment regimen*; (2) *the doses administered after the initial dose*; and (3) *the doses administered after the secondary doses*. We interpret these terms consistent with the Specification's definitions.

2. Preambles: "A method of treating . . ."

There are three claim terms addressed by the parties for claim construction, the first of which concerns the preambles of independent claims 1, 15, 26, and 29, each of which recites "[a] method of treating . . ." a disorder "in a patient in need"—"an angiogenic eye disorder" in claim 1, "diabetic macular edema" or DME in claim 15, and "age related macular degeneration" or AMD in claims 26 and 29 (although in claim 29 a hyphen is included between *age* and *related*). Ex. 1001, 23:2–7, 23:53–58, 24:26–31, 24:50–55 (independent claim preambles).

Petitioner states,

> [f]or the purposes of this petition only, Petitioner does not contest that the preamble of challenged claims 1, 15, 26, or 29 is limiting, though it reserves the right to do so in separate proceedings. Petitioner proposes that the preamble be given the meaning of "a method for treating . . ." consistent with the meaning given to that term in the [final decision of IPR2021-00881 concerning U.S. Patent 9,254,338 and the institution decision of IPR2022-01226 concerning U.S. Patent 10,888,601]. Ex. 1011; Ex. 1013. Petitioner further proposes that the claims not be construed to require a particular level of efficacy.

Pet. 17–18 (citing Ex. 1001, 5:31–48, claims 1, 8, 17, 21, 30; Ex. 1002 ¶¶ 26–30, 80–85; Ex. 1011, 19, 23; Ex. 1013, 9–10; Ex. 1012, 10–12).

To this, Patent Owner responds, "[f]or purposes of this Preliminary Response only, Patent Owner does not challenge Petitioner's proposed construction of the preambles, Pet. 17-18." Prelim. Resp. 13.

As there is no dispute, and because we agree with Petitioner's position on the claims' preambles, which is consistent with the Board's decisions in other related proceedings, for purposes of this institution decision, we adopt Petitioner's proposed interpretation that the preambles are limiting, but that no particular level of efficacy is required.

3. "wherein exclusion criteria for the patient include both of . . ."

Claim 14, which depends from claim 1, recites "exclusion criteria for the patient include both of: (1) active ocular inflammation; and (2) active ocular or periocular infection." Ex. 1001, 23:49–53.

Petitioner asserts that this recited subject matter should be entitled to no patentable weight under the printed matter doctrine because it is directed only to informational content, i.e., deciding whether to treat a patient based on an instruction, with no functional relationship to the rest of the claimed

method and no related positive step to be performed. Pet. 18–20 (citing *Praxair Distrib., Inc. v. Mallinckrodt Hosp. Prods. IP Ltd.*, 890 F.3d 1024, 1032 (Fed. Cir. 2018); Ex. 1002 ¶¶ 26–30, 86–90; Ex.1012, 18–20 (IPR2022-01225 Institution Decision); Ex.1013, 12–15 (IPR2022-01226 Institution Decision); Ex. 1063, 29–37 (District Court Order on Claim Construction)).

To this, Patent Owner responds, "[f]or purposes of this Preliminary Response only, Patent Owner does not challenge Petitioner's proposed construction of. . . the exclusion criteria limitation, Pet. 18-20." Prelim. Resp. 13.

As there is no dispute, and because we agree with Petitioner's position that this claim language falls under the printed matter doctrine, which is consistent with the Board's decisions in other related proceedings, we adopt Petitioner's proposed interpretation that the "exclusion criteria" language is not limiting for purposes of this decision.

4. Results Limitations

Independent claim 1 recites, "*wherein the patient achieves a gain in visual acuity within 52 weeks following the initial dose*." Ex. 1001, 23:13–14 (italics added here and below to highlight claim language). Claims 2–4 and 8–10 further define this "*gain in visual acuity*." *Id.* at 23:15–25, 23:32–38. Independent claim 15 has no *gain in visual acuity* requirement, but claims 16–23, depending therefrom, do and are similar to the claim 1 and its dependent claims. *Id.* at 23:53–24:21. Independent claim 26 recites, "*wherein the method is as effective in achieving a gain in visual acuity as monthly administration of 0.5 mg of ranibizumab by intravitreal injection in human subjects with age-related macular degeneration at 52 weeks*

following the initial dose," and dependent claim 28 further defines this "*gain in visual acuity*." *Id.* at 24:40–44, 24:47–49. Finally, independent claim 29 recites, "*wherein the method is as effective in maintaining visual acuity as monthly administration of 0.5 mg of ranibizumab by intravitreal injection in human subjects with age-related macular degeneration at 52 weeks following the initial dose*," and dependent claim 30 further defines this "*gain in visual acuity*." *Id.* at 24:63–25:5. Collectively we refer to these clauses as the "*results limitations.*"

Although Petitioner neglects to address the *results limitations* in the Claim Construction section of its Petition, it does discuss them at length elsewhere and argues their meaning. *See* Pet. 17–20 (not discussed under Claim Construction), 31–61 (discussed under unpatentability rationale).

Petitioner's first point regarding the *results limitations* is that, if we determine that they are entitled to patentable weight, they "do not require every patient [to whom the drug is administered] to achieve the recited gain" (or, presumably, maintenance) of visual acuity, but only apply in each instance to "***a*** patient." Pet. 4–5. Thus, Petitioner contends that if at least *some* patients were shown to achieve the recited results at the time required by the claim, then the limitations were obvious over the prior art disclosing those results. *Id.* at 4–5, 32–34, 37–38, 40–48.

In connection with Grounds 10 and 11, Petitioner also takes an alternative position—that the *results limitations* are not entitled to patentable weight because they are part of "wherein" clauses, are not recited as affirmative steps, and do not change or alter any expressly recited claim steps. Pet. 5, 56–60 (citing *In re Kubin*, 561 F.3d 1351, 1353 (Fed. Cir. 2009)). As support for this position, Petitioner points to the District Court's

Order on Claim Construction in the related Northern District of West Virginia litigation, arguing that that Court applied this same reasoning and found "the 'Best Corrected Visual Acuity' limitations of the Challenged Claims lacks patentable weight." *Id.* at 57–58 (citing Ex. 1063, 37–39).

Petitioner also points to additional Federal Circuit precedent as warranting a conclusion that the challenged claims' *results limitations* should not be given patentable weight because they are "wherein" clauses without structure or acts, or are mere recitation of intended results. *Id.* at 58–60 (citing *Syntex (U.S.A.) LLC v. Apotex, Inc.*, 407 F.3d 1371, 1378 (Fed. Cir. 2005); *Bristol-Myers Squibb Co. v. Boehringer Ingelheim Corp.*, 86 F. Supp. 2d 433, 443 (D.N.J.) *aff'd in relevant part*, 246 F.3d 1368, 1376 (Fed. Cir. 2001); *In Re: Copaxone Consol. Cases*, 906 F.3d 1013 (Fed. Cir. 2018); *Minton v. Nat'l Ass'n. of Sec. Dealers, Inc.*, 336 F.3d 1373, 1381, (Fed. Cir. 2003); *Lockheed Martin Corp. v. Space Systems/Loral, Inc.*, 324 F.3d 1308, 1319 (Fed. Cir. 2003)).

Petitioner also contends *Los Angeles Biomedical Research Institute at Harbor-UCLA Medical Center v. Eli Lilly & Co.*, 849 F.3d 1049 (Fed. Cir. 2017) ("*LA Biomed*"), relied upon by the Board in construing the *results limitations* in its institution decision in IPR2022-01524, is factually distinguishable from the present case because the claim in *LA Biomed* phrased the required results as active steps and those results were essential to the claimed method because the recited drug dosage amounts were somewhat variable. *Id.* at 58–60.

Patent Owner argues that the *results limitations* have patentable weight and are limitations, consistent with the Board's prior decision in IPR2022-01524 (*see* Paper 9 at 14–18). As did the Board in this prior IPR

decision regarding the same claim language, Patent Owner asserts that the facts and law of the Federal Circuit's decision in *LA Biomed* apply and support this conclusion. Prelim. Resp. 8–9, 14–20 (citing, *inter alia*, *LA Biomed*). As to the *results limitations* being "wherein" clauses, Patent Owner identifies that whether such clauses are given patentable weight depends on whether they relate back and clarify the invention's requirements and give meaning and purpose to the manipulative steps, and do not merely duplicate other limitations; thus, it is a case-by-case determination. *Id.* at 14 (citing *Griffin v. Bertina*, 285 F.3d 1029, 1033 (Fed. Cir. 2002); *LA Biomed*, 849 F.3d at 1061; *Allergan Sales, LLC v. Sandoz, Inc.*, 935 F.3d 1379, 1378–80 (Fed. Cir. 2019)). Patent Owner also argues that the cases cited by Petitioner as support for mere recited results not being limitations each relate to clauses in claim preambles and, so, are distinguishable from the present case, making *LA Biomed* more analogous. *Id.* at 16.

Patent Owner argues that, similar to the claim at issue in *LA Biomed,* the claims here are not specific as to how much drug is administered per the claimed regimen, but only recite a minimum treatment (e.g., "one or more" doses), but a treatment that has the ultimate effect of the *results limitations.* *Id.* at 18–19. Patent Owner argues that this means the *results limitations* are neither inherent results of the claimed method nor duplicative of other limitations. *Id.* at 19–20.

Patent Owner also argues that the *results limitations* are not found solely in the challenged independent claims, but are also recited and further narrowed by the '572 patent's dependent claims. *Id.* at 18. Patent Owner argues that construing the *results limitations* to have no patentable weight would render such dependent claims to have no meaning. *Id.*

Having considered the parties' arguments, we agree with Patent Owner's position and conclude that the *results limitations* have patentable weight and are claim limitations. We explain below.

The facts here are similar to those of *LA Biomed*, where claims covered administering a pharmaceutical to a person in need of treatment according to a certain regimen, but included some variability (in *LA Biomed*: "dosage up to 1.5 mg/hg/day" and "not less than 45 days"), and included a limitation in the body of the independent claim to a treatment result ("arresting or regressing" a tissue fibrosis). *LA Biomed*, 849 F.3d at 1053–54. Similarly, here, as can be seen from claim 1 reproduced above at Section I.C, most claims are directed to administering a pharmaceutical (aflibercept) to patients in need thereof, at a specified minimum regimen (i.e., variable) and dosage, where a result of that treatment is expressly recited in the body of the independent claims. *See, e.g.*, Ex. 1001, 23:2–14 (claim 1), 24:26–43 (claim 26), 24:50–67 (claim 29).

In *LA Biomed*, in an *inter partes* review, the Board construed the "arresting or regressing" clause to have no limiting role and to merely state an intended result, ultimately finding the claims unpatentable as obvious. *Id.* at 1054–57. The Federal Circuit disagreed and the Board's decision was vacated and the case was remanded on that issue. *LA Biomed*, 849 F.3d at 1067–68.

Relating to the claim construction, the Federal Circuit found that the patent at issue was "clear" that the tissue fibrosis, recited by the claim as arrested or regressed by the otherwise recited treatment, was not the same as and did not *necessarily* accompany the symptom of erectile disfunction (taught in and the focus of the relied-upon prior art), although the former

(fibrosis) may frequently result in the latter (disfunction). *Id.* at 1059. The Federal Circuit held that the "arresting or regressing" clause was more than a mere statement of intended result, but was a limitation carrying patentable weight because the phrase was drafted as a part of a separate step of the method rather than of the preamble, the "arresting or regressing" language demanded efficacy, and the efficacy was linked to specific treatment minimum duration and dosage. *Id.* at 1060–61.

The Federal Circuit also found it important that the claims at issue in *LA Biomed* recited a maximum dosage level and a minimum treatment period, rather than express dosage amounts (and, presumably, specific treatment periods). *Id.* at 1061. The Federal Circuit found that this variability in the claimed treatment supported that the associated recited *results* were not merely inherent in carrying out the treatment, but added an efficacy requirement not otherwise found in the claim language. *Id.*

In part because the Board did not consider the arresting/regressing result limitation in its unpatentability analysis, the Federal Circuit agreed with the patent owner that the Board's findings were insufficient. *Id*. at 1064, 1067. The Federal Circuit found that the prior art reference relied upon in the Board's decision for teaching the claimed treatment, and also relied upon to link the condition of fibrosis with the symptom of erectile dysfunction, did not teach treating a population of patients suffering from erectile dysfunction *only* because of a fibrosis condition and, even though such patients *may* have had fibrosis, *it was not certain*; and further found that other cited prior art did not make certain a link between fibrosis and such dysfunction. *Id.* at 1065–66. The Federal Circuit found the Board's reliance on this art as teaching the claimed subject matter was error.

Concerning the fact that the claims here recite the *results limitations* as part of "wherein" clauses, we find that, here, the claimed results give meaning and purpose to the other steps of the claimed methods. *Griffin*, 285 F.3d at 1034. In fact, the active steps of every independent claim of the '572 patent are styled as "wherein" clauses. *See* Ex. 1001, 23:2–25:5. As noted above in our discussion of *LA Biomed*, the steps of the drug regimen of the independent claims here are not specific as to how many doses are administered, reciting only at least one secondary and tertiary dose after the initial dose. Thus, the *results limitations* inform the reader about the purpose of the methods (or "the essence of the invention"), which, for most claims, is to gain or maintain visual acuity, and also illuminate the dosage administration steps in a material way, i.e., so that one may know collectively how many secondary or tertiary doses are sufficient. *Griffin*, 285 F.3d at 1033.

Concerning this last point that the *results limitations* inform the steps of the claimed method, we also look to the '571 patent's intrinsic record for guidance. As already noted, the independent claims are drafted so as to require minimum dosing of patients with at least one secondary and at least one tertiary administration. *See* Ex. 1001, 23:2–25:5 (claims). However, the written description of the '572 patent describes that,

> [t]he methods of the invention may comprise administering to a patient any number of secondary and/or tertiary doses of a VEGF antagonist. For example, in certain embodiments, only a single secondary dose is administered to the patient. In other embodiments, two or more (e.g., 2, 3, 4, 5, 6, 7, 8, or more) secondary doses are administered to the patient. Likewise, in certain embodiments, only a single tertiary dose is administered to the patient. In other

> embodiments, two or more (e.g., 2, 3, 4, 5, 6, 7, 8, or more) tertiary doses are administered to the patient. . . .
>
> The frequency of administration may also be adjusted during the course of treatment by a physician depending on the needs of the individual patient following clinical examination.

See, *inter alia*, *id.* at 4:22–31, 4:52–55. According to the '572 patent, the only way to know if the treatment is effective is by identifying whether the patient "exhibits a loss of 15 or fewer letters on the Early Treatment Diabetic Retinopathy Study ETDRS) visual acuity chart" or "gain[s] . . . one or more . . . letters." *Id.* at 7:46–52. Thus, only by the result of treatment can the practitioner know whether the "at least one" doses after the initial dose are sufficient. This variability is reflected in the dependent claims as well, where they require specific results (e.g., gaining 7 letters as in claim 3) or results within a specific time (e.g., within 24 weeks as in claim 4) or require a specific number of doses (e.g., two secondary doses as in claim 11). Thus, the intrinsic record supports the conclusion that the *results limitations*, where recited, are not mere intended results that inherently occur via the claimed method(s) and superfluous to the other recited steps, but are requirements of the invention.

We recognize that our interpretation of the *results limitations* may be at odds with aspects of the claim construction by the District Court in the litigation in the Northern District of West Virginia. *See* Ex. 1063, 37–39 (under the Section, "The Best Corrected Visual Acuity claim language also lacks patentable weight"). The Board is not bound by a district court's claim construction, although such is considered, is given appropriate weight, and may be informative. *See* CTPG at 46–47 (quoting 37 C.F.R. § 42.100(b));

see also SkyHawke Tech., LLC v. Deca Int'l Corp., 828 F.3d 1373, 1376 (Fed. Cir. 2016) (Board not bound by district court claim construction).

On whether the *results limitations* are accorded patentable weight, we diverge from the District Court's conclusion, which, in our reading, appears to largely mirror the Order's preceding conclusion that claimed "exclusion criteria" are merely informational and do not merit patentable weight, and overlooks critical facts of record here, including that the claimed dosing regimen recites *only minimum* administrations of the drug (at least one secondary and at least one tertiary dose), making it variable and necessarily informed by the accompanying recitation of the results to be achieved. *See supra* discussion; Ex. 1063, 37–39.

Looking at the claims from the perspective of the ordinarily skilled artisan, if the method of claim 1, for example, was literally performed step-by-step by administering to the claimed patient (to treat an angiogenic eye disorder) one initial, one secondary, and one tertiary 2 mg dose of aflibercept, along the recited timeline, but that patient never achieved a gain in visual acuity within 52 weeks, the reasonable interpretation by that artisan would be that the claimed method was not fully practiced. Further, the cases relied on by the District Court for its conclusion are factually distinguishable, in that they involved claims where the recited results were in the preamble and not set out in the body of the claims, or otherwise recited *specific* doses/regimens rendering the recited results inherent and thus superfluous, both of which, according to the Federal Circuit, as discussed above, were important to the analysis, and are different from the facts here. *Compare LA Biomed*, 849 F.3d at 1054, 1060–61, *with Bristol-*

Myers Squibb, 246 F.3d at 1371, 1375–76; *Copaxone*, 906 F.3d at 1017–18, 1023–24; and *King Pharms.*, 616 F.3d at 1270–71, 1274–76.

We find, in agreement with Patent Owner, that the *results limitations* of the challenged claims are limitations and must be given patentable weight for the same reasons *arresting or regressing a tissue fibrosis* was a limitation in *Los Angeles Biomed*. The claims here are directed to expressly required results from the administration of 2 mg aflibercept to patients in an initial dose, in *at least one* secondary dose 4 weeks later, and in *at least one* tertiary dose 8 weeks later. We note that the present claims include express variability in the dosing regimen in that they require only one secondary and tertiary dose, but expressly allow for more. Furthermore, the *results limitations*, although phrased as "wherein" clauses, like each active step of the independent claims, are in the body of the claims, not their preambles, and do not merely duplicate other claim requirements. Thus, we are unpersuaded by the precedent cited by Petitioner regarding the non-limiting nature of "wherein" clauses and preambles reciting results.

Therefore, we find that the recited *results limitations* of claims 1–4, 8–10, 16, 17, 20, 21, 26, and 28–30 are claim limitations and have patentable weight.

C. PRIORITY

Patent Owner argues that "[a]ll claims of the '572 Patent are entitled to a priority date no later than January 21, 2011," which is the filing date of related Provisional Application 61/434,836 ("the '836 provisional"). Prelim. Resp. 12 (citing, *inter alia*, Ex. 2025 ¶ 18). Petitioner contests priority only with respect to dependent claim 25 which, Petitioner argues, recites "five loading 2mg doses to treat DME," meaning an initial dose and four

secondary doses, that "was not described in the specification of any application to which the '572 patent claims priority prior to July 12, 2013." Pet. 14 n.1 (citing Ex. 1002 ¶¶ 91–103).

"A reference patent is only entitled to claim the benefit of the filing date of its provisional application if the disclosure of the provisional application provides support for the claims in the reference patent in compliance with § 112, ¶ 1." *Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1381 (Fed. Cir. 2015); *see also Penumbra, Inc. v. RapidPulse, Inc.*, IPR2021-01466, Paper 34, at 18–25 (precedential) (analyzing the challenged patent's priority). "A disclosure in a parent application that merely renders the later-claimed invention obvious is not sufficient to meet the written description requirement; the disclosure must describe the claimed invention with all its limitations." *Tronzo v. Biomet, Inc.*, 156 F.3d 1154, 1158 (Fed. Cir. 1998).

Here, enablement is not contested, and to satisfy 35 U.S.C. § 112, first paragraph, as to written description, "the test for sufficiency is whether the disclosure of the application relied upon reasonably conveys to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date." *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc) (citation omitted). "[T]he written description requirement does not demand either examples or an actual reduction to practice." *Id.* at 1352.

The question presented on the issue of priority is, therefore, whether the '836 provisional provides sufficient written description support under 35 U.S.C. § 112 for claim 25 so that it, along with all other claims, may be accorded priority to January 21, 2011, at the latest.

Claim 25 depends from independent claim 15, which together state:

> 15. A method of treating diabetic macular edema in a patient in need thereof comprising sequentially administering to the patient a single initial dose of 2 mg of aflibercept, followed by one or more secondary doses of 2 mg of aflibercept, followed by one or more tertiary doses of 2 mg of aflibercept;
>
> wherein each secondary dose is administered to the patient by intravitreal injection approximately 4 weeks following the immediately preceding dose; and
>
> wherein each tertiary dose is administered to the patient by intravitreal injection approximately 8 weeks following the immediately preceding dose.
>
> 25. The method of claim 15 wherein four secondary doses are administered to the patient.

Ex. 1001, 23:53–64, 24:24–25. As noted above, there is no dispute as to the priority support for any of this claimed subject matter of claim 25 other than the "four secondary doses."

The disclosure of the '836 provisional appears to be at least substantially similar to the '572 patent's written description. For example, at its paragraphs 5 and 6, the '836 provisional describes the basic premise of the claims of the '572 patent, that is, to provide an initial dose of VEGF antagonist to an AMD or DME patient, followed by three secondary doses every 2–4 weeks apart, followed by tertiary doses administered every 8 or more weeks apart. Ex. 2025 ¶¶ 5–6; *see also* Ex. 1001, 2:22–33 (describing the same). Moreover, the '836 provisional expressly defines the terms "initial dose," "secondary dose," and "tertiary dose," identically to the '572 patent. Ex. 2025 ¶ 15; Ex. 1001, 3:51–61. Further, both the '572 patent and

the '836 provisional indicate exemplary embodiments for such doses, stating:

> The methods of the invention may comprise administering to a patient any number of secondary and/or tertiary doses of a VEGF antagonist. For example, in certain embodiments, only a single secondary dose is administered to the patient. In other embodiments, two or more (***e.g.,*** 2, 3, ***4***, 5, 6, 7, 8, or more) ***secondary doses*** are administered to the patient. Likewise, in certain embodiments, only a single tertiary dose is administered to the patient. In other embodiments, two or more (*e.g.,* 2, 3, 4, 5, 6, 7, 8, or more) tertiary doses are administered to the patient. . . .
>
> In embodiments involving multiple secondary doses, each secondary dose may be administered at the same frequency as the other secondary doses. For example, each secondary dose may be administered to the patient 4 weeks after the immediately preceding dose.

Ex. 2025 ¶¶ 18–19 (emphasis added); Ex. 1001, 4:22–34. Moreover, both the '836 provisional and the '572 patent describe the same extensive list of effective doses, including the claimed 2.0 mg, for each dose. Ex. 2025 ¶ 29; Ex. 1001, 7:1–28.

The requirement added by claim 25 is that *four secondary doses* are administered (after the initial dose) and we find this to be expressly described as an example in the above-quoted portion of the '836 provisional (*see* emphasis in quote above). A specific example perfectly and verbatim embodying claim 25 is not required. *See Ariad*, 598 F.3d at 1352. It is apparent from the rest of the above-cited disclosure of the '836 provisional that the remainder of the subject matter of claims 15 and 25 is likewise disclosed.

On this record, we find, in agreement with Patent Owner's position, that the '836 provisional's disclosure provides sufficient support under

35 U.S.C. § 112 for claim 25 such that it, along with the other claims, should be accorded priority to the provisional's filing date of January 21, 2011.

D. APPLICABLE LEGAL STANDARDS FOR PATENTABILITY

"In an IPR, the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable." *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (requiring *inter partes* review petitions to identify "with particularity . . . the evidence that supports the grounds for the challenge to each claim")). This burden of persuasion never shifts to Patent Owner.[17] *See Dynamic Drinkware*, 800 F.3d at 1378 (discussing the burden of proof in *inter partes* review).

An *inter partes* review may be instituted if the information presented by a petitioner in the petition, in view of the patent owner's preliminary response and the preliminary record, shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least one of the claims challenged in the petition. 35 U.S.C. § 314.

"Anticipation requires that all of the claim elements and their limitations are shown in a single prior art reference." *In re Skvorecz*, 580 F.3d 1262, 1266 (Fed. Cir. 2009). To anticipate "it is not enough that the prior art reference discloses part of the claimed invention, which an ordinary artisan might supplement to make the whole, or that it includes multiple, distinct teachings that the artisan might somehow combine to achieve the claimed invention." *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359,

[17] Herein we discuss certain of Patent Owner's arguments as not persuasive, but this in only within the context of the preliminary record and Petitioner's arguments, taken as a whole. We do not shift the ultimate burden.

1371 (Fed. Cir. 2008). "However, a reference can anticipate a claim even if it 'd[oes] not expressly spell out' all the limitations arranged or combined as in the claim, if a person of skill in the art, reading the reference, would 'at once envisage' the claimed arrangement or combination." *Kennametal, Inc. v. Ingersoll Cutting Tool Co.*, 780 F.3d 1376, 1381 (Fed. Cir. 2015) (quoting *In re Petering*, 301 F.2d 676, 681 (CCPA 1962)).

A prior art reference without express reference to a claim limitation may anticipate by inherency. *See In re Cruciferous Sprout Litig.*, 301 F.3d 1343, 1349 (Fed. Cir. 2002). "Under the principles of inherency, if the prior art necessarily functions in accordance with, or includes, the claimed limitations, it anticipates." *Id.* (quoting *MEHL/Biophile Int'l Corp. v. Milgraum*, 192 F.3d 1362, 1365 (Fed. Cir. 1999)).

Regarding obviousness, the Supreme Court in *KSR International Co. v. Teleflex Inc.*, 550 U.S. 398 (2007), reaffirmed the framework for determining obviousness set forth in *Graham v. John Deere Co.*, 383 U.S. 1 (1966). The *KSR* Court summarized the four factual inquiries set forth in *Graham* (383 U.S. at 17–18) that are applied in determining whether a claim is unpatentable as obvious under 35 U.S.C. § 103 as follows: (1) determining the scope and content of the prior art; (2) ascertaining the differences between the prior art and the claims at issue; (3) resolving the level of ordinary skill in the art;[18] and (4) considering objective evidence indicating obviousness or non-obviousness.[19] *KSR*, 550 U.S. at 406.

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[18] *See supra* Section II.A.

[19] There is no asserted evidence pertaining to objective indicia of non-obviousness. *See* Prelim. Resp.; *see also* Pet. 61–62 (asserting no such evidence exists).

"The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results." *Id.* at 416. "[W]hen the question is whether a patent claiming the combination of elements of prior art is obvious," the answer depends on "whether the improvement is more than the predictable use of prior art elements according to their established functions." *Id.* at 417.

With these standards in mind, and in view of the definition of the ordinarily skilled artisan, we address Petitioner's challenges below.

E. PETITIONER'S ASSERTED PRIOR ART

1. 2009 PR (Ex. 1005)

Regeneron's 2009 Press Release, which we refer to herein as 2009 PR, is a press release that on its face indicates was published by Patent Owner on September 14, 2009. Ex. 1005, 1–2. There is currently no dispute that 2009 PR is prior art. *See generally* Prelim. Resp.; *see also* Pet. 20 ("[A]ll references discussed herein are prior art under both pre-AIA and AIA [35] U.S.C. §102.").

2009 PR discloses Phase 2 (not named) and Phase 3 (named VIEW 1/VIEW 2) clinical trials being conducted by Regeneron and Bayer HealthCare, evaluating the administration of VEGF Trap-Eye ("developed by Regeneron and Bayer Healthcare AG") at, *inter alia*, 2 mg for three monthly, intravitreally injected loading doses, followed by 2 mg every eight weeks (another arm of the trial tested as-needed (PRN) dosing), for treating Diabetic Macular Edema (DME) and age-related macular degeneration (wet AMD), respectively. Ex. 1005, 1.

Both studies evaluated maintenance of (loss of fewer than 15 letters) and improvement in visual acuity (after six months) by testing letters read

correctly by patients on an ETDRS chart; results with the VEGF Trap-Eye would be compared to results from using focal laser treatment or ranibizumab at 0.5 mg every four weeks, respectively. *Id.*

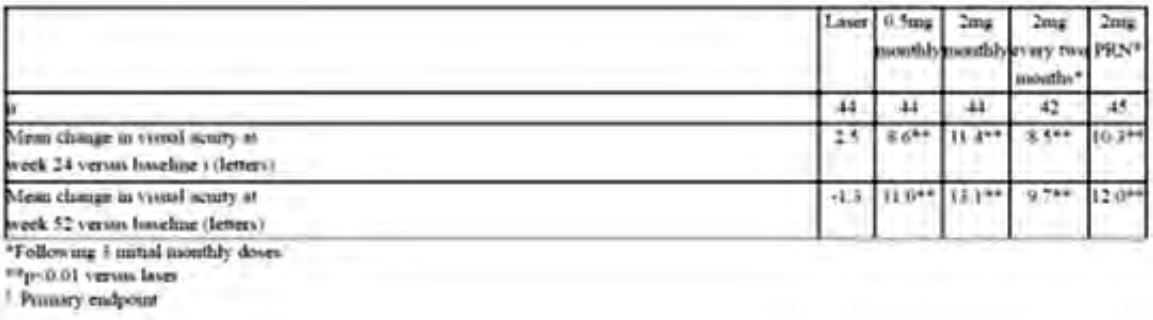
Regarding the Phase 2 trial, 2009 PR discloses that patient enrollment was complete and data expected (in first half of 2010), but no results were disclosed. *Id.* Regarding the Phase 3 trial, 2009 PR discloses results were expected in the fourth quarter of 2010. *Id.*

2. Dec. 2010 PR (Ex. 1006)

Regeneron's December 2010 Press Release, which we refer to herein as Dec. 2010 PR, is a press release that on its face indicates was published by Patent Owner on December 20, 2010. Ex. 1005, 1–2. Petitioner contends that Dec. 2010 PR is prior art and Patent Owner argues that it is not prior art. Pet. 20 ("[A]ll references discussed herein are prior art under both pre-AIA and AIA [35] U.S.C. §102."); Prelim. Resp. 20–21 (Summary of Arguments), 22–26, 43, 44. This is not the only one of Petitioner's asserted references that Patent Owner alleges is not prior art. We address this issue and all implicated references together at Section II.F below.

Dec. 2010 PR discloses, *inter alia*, a Phase 2 clinical trial (called DA VINCI) evaluating the use of VEGF Trap-Eye, an aflibercept ophthalmic solution (developed by a Regeneron-Bayer HealthCare collaboration), intravitreally injected to treat patients with DME, where patients received 2 mg at three initial monthly doses and then 2 mg every two months (or PRN (as-needed)), and visual acuity was evaluated

compared to baseline with the following results (reproduced table from reference):



	Laser	0.5mg monthly	2mg monthly	2mg every two months*	2mg PRN*
n	44	44	44	42	45
Mean change in visual acuity at week 24 versus baseline (letters)	2.5	8.6**	11.4**	8.5**	10.3**
Mean change in visual acuity at week 52 versus baseline (letters)	-1.3	11.0**	13.1**	9.7**	12.0**

*Following 3 initial monthly doses
**p<0.01 versus laser
† Primary endpoint

Ex. 1006, 1–5.

Dec. 2010 PR also reports on the VIEW 1 and VIEW 2 Phase 3 clinical trials and states that "all regimens of VEGF Trap-Eye, including VEGF Trap-Eye dosed every two months, successfully met the primary endpoint compared to the current standard of care, ranibizumab dosed every month. The primary endpoint was statistical non-inferiority in the proportion of [aflibercept-treated] patients who maintained (or improved) vision over 52 weeks compared to [patients treated] with ranibizumab." *Id.* at 5.

3. Nov. 2010 PR (Ex. 1007)

Regeneron's November 2010 Press Release, which we refer to herein as Nov. 2010 PR, is a press release that on its face indicates was published by Patent Owner on November 22, 2010. Ex. 1005, 1–2. Petitioner contends that Nov. 2010 PR is prior art and Patent Owner argues that it is not prior art. Pet. 20 ("[A]ll references discussed herein are prior art under both pre-AIA and AIA [35] U.S.C. §102."); Prelim. Resp. 20–21 (Summary of Arguments), 26–28; *see infra* Section II.F.

Nov. 2010 PR discloses, *inter alia*, a Regeneron and Bayer HealthCare Phase 3 clinical trial (called VIEW 1/VIEW 2) where VEGF Trap-Eye (aflibercept ophthalmic solution) was intravitreally injected to treat patients with DME, at 2 mg, in three initial monthly doses and then every two months (or PRN (as-needed)), and visual acuity was evaluated compared to baseline and to 0.5 mg monthly ranibizumab treatments, with the following results (table reproduced from reference):

	Ranibizumab 0.5mg monthly	VEGF Trap-Eye 0.5mg monthly	VEGF Trap-Eye 2mg monthly	VEGF Trap-Eye 2mg every 2 months
Maintenance of vision* (% patients losing <15 letters) at week 52 versus baseline				
VIEW 1	94.4%	95.9%**	95.1%**	95.1%**
VIEW 2	94.4%	96.3%**	95.6%**	95.6%**
Mean improvement in vision* (letters) at 52 weeks versus baseline (p-value versus ranibizumab 0.5mg monthly)***				
VIEW 1	8.1	6.9 (NS)	10.9 (p<0.01)	7.9 (NS)
VIEW 2	9.4	9.7 (NS)	7.6 (NS)	8.9 (NS)

* Visual acuity was measured as the total number of letters read correctly on the Early Treatment Diabetic Retinopathy Study (ETDRS) eye chart

** Statistically non-inferior based on a non-inferiority margin of 10%, using confidence interval approach (95.1% and 95% for VIEW 1 and VIEW 2, respectively)

*** Test for superiority

NS=non-significant

Ex. 1007, 1–6. Nov. 2010 PR states that "[v]isual acuity is measured as a score based on the total number of letters read correctly on the Early Treatment Diabetic Retinopathy Study (ETDRS) eye chart, a standard chart used in research to measure visual acuity, over 52 weeks. Maintenance of vision is defined as losing fewer than three lines (equivalent to 15 letters) on the ETDRS chart." *Id*. at 3.

4. Dixon (Ex. 1009)

Dixon is an article that indicates on its face its publication in 2009. Ex. 1006, 1573. There is currently no dispute that Dixon is prior art. *See generally* Prelim. Resp.; *see also* Pet. 20 ("[A]ll references discussed herein are prior art under both pre-AIA and AIA [35] U.S.C. §102.").

Dixon is a review of clinical trials regarding administering VEGF Trap-Eye (aflibercept) to treat neovascular AMD. Ex. 1006, 1573. Dixon discloses that "VEGF Trap-Eye is a novel anti-VEGF therapy, with Phase I and II trial data indicating safety, tolerability and efficacy for the treatment of neovascular AMD." *Id.* Dixon describes VEGF Trap-Eye as "a fusion protein of key binding domains of human VEGFR-1 and -2 combined with a human IgG Fc fragment." *Id.* at 1575. Dixon discloses that "VEGF Trap-Eye and aflibercept (the oncology product) have the same molecular structure, but there are substantial differences between the preparation of the purified drug product and their formulations." *Id.* Dixon states that "VEGF Trap-Eye is a novel anti-VEGF drug currently in commercial development for the treatment of neovascular AMD by Regeneron Pharmaceuticals, Inc. (Tarrytown, NY, USA) in the US and in collaboration with Bayer HealthCare (Leverkusen, Germany) in global markets." *Id.*

Dixon discloses that current therapy requires "frequent intraocular injections, as often as monthly, without a defined stopping point," and that "[t]he time and financial burden of monthly injections has led to the initiation of studies to examine the efficacy of alternative dosing schedules." *Id.* at 1574, 1577. Dixon discloses that:

> [d]ue to its high binding affinity and the ability to safely inject high doses into the eye, VEGF Trap-Eye may have longer duration of effect in the eye. Two Phase III studies in wet AMD, VIEW 1 and VIEW 2, are currently under way and seek to compare monthly ranibizumab to monthly or bimonthly VEGF Trap-Eye.

Id. at 1577. Specifically, Dixon discloses that the Phase 3 trial initiated in August of 2007 "will evaluate the safety and efficacy of intravitreal VEGF Trap-Eye at doses of 0.5 and 2.0 mg administered at 4-week dosing intervals

and 2.0 mg at an 8 week dosing interval (following three monthly doses), compared with 0.5 mg of ranibizumab administered every 4 weeks." *Id.* at 1576.

Dixon also discloses a prior Phase 2 clinical trial (called CLEAR-IT-2) where VEGF Trap-Eye was administered (to 157 AMD patients) by a single intravitreal injection of 0.5 mg or 2.0 mg monthly (i.e., 4 doses), or quarterly (i.e., 2 doses; some patients also received 4.0 mg doses), for 12 weeks. *Id.* at 1576. Dixon states that "[p]atients initially treated with 2.0 or 0.5 mg of VEGF Trap-Eye monthly achieved mean improvements of 9.0 ($p < 0.0001$) and 5.4 ($p < 0.085$) ETDRS letters with 29 and 19% gaining, respectively, ≥ 15 ETDRS letters at 52 weeks." *Id.* Relating to this study, some patients also received the same dose on a PRN (as needed) basis following the initial 12 weeks. *Id.* Dixon concludes: "In Phase II study data, patients dosed in a similar fashion to the PrONTO [ranibizumab] trial demonstrated stabilization of their vision that was similar to previous studies of ranibizumab at 1 year." *Id.* at 1577.

5. 2006 PR (Ex. 1027)

Regeneron's 2006 Press Release, which we refer to herein as 2006 PR, is a press release that on its face indicates was published by Patent Owner on May 1, 2006. Ex. 1027, 1–4. There is currently no dispute that 2006 PR is prior art. *See generally* Prelim. Resp.; *see also* Pet. 20 ("[A]ll references discussed herein are prior art under both pre-AIA and AIA [35] U.S.C. §102.").

2006 PR discloses, *inter alia*, a Phase 1 clinical trial by Regeneron where 21 wet AMD patients received a single intravitreal injection of 2 mg

of VEGF Trap, followed by 6 weeks of evaluation. Ex. 1027, 1. Results reported included:

> • Of the 20 patients evaluable for efficacy, 95 percent had stabilization or improvement in visual acuity, defined as ≤ 15 letter loss on the Early Treatment of Diabetic Retinopathy Study (ETDRS) eye chart.
>
> • The best corrected visual acuity (BCVA) for all patients in the study increased by a mean of 4.8 letters at 6 weeks. In the two highest dose groups (2 mg and 4 mg), the mean improvement in BCVA was 13.5 letters, with three of six patients gaining 15 or more letters.

Id. at 2. 2006 PR also states, "[t]he data from the phase 1 trial were presented today at the 2006 Association for Research in Vision and Ophthalmology (ARVO) Annual Meeting and are available on the Company's web site, www.regeneron.com." *Id.* at 1.

6. 2007 ARVO (Ex. 1030)

Exhibit 1030 is an abstract from an ARVO Annual Meeting, which we refer to as 2007 ARVO, that on its face indicates was authored by D.V. Do and others, and published in May 2007. Ex. 1010, 1–2. There is currently no dispute that 2007 ARVO is prior art. *See generally* Prelim. Resp.; *see also* Pet. 20 ("[A]ll references discussed herein are prior art under both pre-AIA and AIA [35] U.S.C. §102.").

2007 ARVO reports results of a Phase 1 study (called the CLEAR-IT DME study) of intravitreal injected VEGF Trap in DME patients where a single 4 mg dose was administered and patients were then monitored for 6 weeks. Ex. 1030. Results were reported as "[f]our patients had improvements in BCVA, ranging from 6 to 10 letters at 4 weeks post-injection." *Id.*

7. 2010 ARVO (Ex. 1010)

Exhibit 1010 is an abstract from an ARVO Annual Meeting, which we refer to as 2010 ARVO, that on its face indicates was authored by J.C. Major, Jr. and D.M. Brown, and published in April 2010. Ex. 1010, 1–2. Petitioner contends that 2007 ARVO is prior art and Patent Owner argues that it is not prior art. Pet. 20 ("[A]ll references discussed herein are prior art under both pre-AIA and AIA [35] U.S.C. §102."); Prelim. Resp. 20–21 (Summary of Arguments), 40–43; *see infra* Section II.F.

2010 ARVO discloses, *inter alia*, a Phase 2 study (called DA VINCI) where DME patients received 2 mg VEGF Trap-Eye via intravitreal injections on a 8 week regimen and then monitored for 6 months. Ex. 1010, 1. Results were reported as: "At 6 months, the mean change in BCVA for each VTE arm ranged from +8.5 to +11.4 letters and was statistically significantly better than the mean change in BCVA in the laser arm (+2.5 letters; $p<0.01$). No significant difference was noted among the VTE arms." *Id.* As a conclusion 2010 ARVO states: "In this patient population at the 24-week primary endpoint intravitreal VTE was generally well tolerated and produced significant improvements from baseline in visual acuity." *Id.* at 2.

8. Hecht (Ex. 1016)

Hecht is Chapter 89, titled *Ophthalmic Preparations*, of Remington: The Science and Practice of Pharmacy Vol. II, 19th ed, published in 1995. Ex. 1016, 1–3, 5 (we cite the added pagination of this exhibit). There is currently no dispute that Hecht is prior art. *See generally* Prelim. Resp.; *see also* Pet. 20 ("[A]ll references discussed herein are prior art under both pre-AIA and AIA [35] U.S.C. §102.").

Hecht states, "**Vehicles**—Sterile isotonic solutions, properly preserved, are suitable for preparing ophthalmic solutions (see Chapter 36). In most cases, where the concentration of active ingredient is low, ie, less than 2.5 to 3.0%, the drug can be dissolved directly in the isotonic vehicle. The finished solutions will be hypertonic somewhat but well within the comfort tolerance of the eye." Ex. 1016, 10–11. Hecht further states, "[o]phthalmic solutions are formulated to be sterile, isotonic and buffered for stability and comfort" and "[g]iven a choice, isotonicity always is desirable and particularly is important in intraocular solutions." *Id.* at 11, 13.

Hecht also states, "[n]onionic surfactants, that class of such compounds which are least toxic to the ophthalmic tissues, are used in low concentrations particularly in steroid suspensions and as aids in achieving solution clarity." *Id.* at 13.

9. CATT/PIER (Exs. 1020–1026)

CATT and PIER refer to seven documents relating to the Comparison of Age-related Macular Degeneration Treatments Trials (CATT): Lucentis-Avastin Trial, and to the Study of rhuFab V2 (Ranibizumab) in Subjects With Subfoveal Choroidal Neovascularization Secondary to Age-Related Macular Degeneration (AMD) (PIER). *See* Exs. 1020–1026. There is currently no dispute that CATT/PIER is/are prior art. *See generally* Prelim. Resp.; *see also* Pet. 20 ("[A]ll references discussed herein are prior art under both pre-AIA and AIA [35] U.S.C. §102.").

Of most relevance, the CATT/PIER documents disclose that, in such studies, patients were excluded if: they had active or recent (within 4 weeks) intraocular inflammation; had active infectious conjunctivitis, keratitis,

scleritis, or endophthalmitis; were being treated for active systemic infection; or had a history of recurrent significant infections. Ex. 1020, 6–7; Ex. 1021, 13; Ex. 1024, 2.

10. Shams (Ex. 1017)

Shams is publication WO 2006/047325 A1 (dated May 4, 2006) of International Patent Application PCT/US2005/038006, filed October 21, 2005. Ex. 1017, codes (10), (43), (21), (22). There is currently no dispute that Shams is prior art. *See generally* Prelim. Resp.; *see also* Pet. 20 ("[A]ll references discussed herein are prior art under both pre-AIA and AIA [35] U.S.C. §102.").

Shams states that its invention is "[a] method . . . for administering to a mammal suffering from, or at risk for, an intraocular neovascular disorder with regular dosing of a therapeutically effective amount of VEGF antagonist, followed by less frequent dosing of a therapeutically effective amount of VEGF antagonist." Ex. 1017, Abstract. Shams discloses that such "effective amounts" or "therapeutically effective amounts" relate to changes in letters visible to patients and the BCVA. *Id.* at 20. One VEGF antagonist disclosed by Shams is ranibizumab. *Id.* at 21. Shams discloses that "doses may be administered according to any time schedule which is appropriate for treatment of the disease or condition." *Id.* at 22–23. As one example, Shams discloses an initial dose followed by another at one month and another at 2 months, followed by doses every 3 months. *Id.* at 23. Shams states, "[h]owever, it is possible to give more frequent doses . . . to patients who do not experience effects on first administration," e.g., additional first or second or third sets of doses, and "dosage amount depends on the specific disease or condition." *Id.* at 24.

11. Elman 2010 (Ex.1018)

Elman 2010 is an article published June 2010, reporting on a trial evaluating ranibizumab to treat DME. Ex. 1018, 1064. There is currently no dispute that Elman 2010 is prior art. *See generally* Prelim. Resp.; *see also* Pet. 20 ("[A]ll references discussed herein are prior art under both pre-AIA and AIA [35] U.S.C. §102.").

Elman 2010 states that in the trial, "[s]ome eyes in the study were switched from the randomly assigned treatment to an alternative treatment during the first 2 years of follow-up because 'failure' or 'futility' criteria were met or the treating investigator determined deviating from the protocol would be in the best interest of the study participant as a patient." Ex. 1018, 1069. Retreatments (additional injections) were possible at the investigator's discretion. *Id.* at 1066.

F. PRIOR ART STATUS OF DEC. 2010 PR, NOV. 2010 PR, AND 2010 ARVO

Patent Owner argues that Dec. 2010 PR (Ex. 1006), Nov. 2010 PR (Ex. 1007), and 2010 ARVO (Ex. 1010), asserted under Petitioner's Grounds 1–3 and 5–8, are not prior art because "[t]hey are from less than a year before the conceded priority date, and they report on the results of the Patent Owner Regeneron's own clinical trials." Prelim. Resp. 2, 20–8, 40–44, 48; *see also supra* Sections II.E.2, II.E.3, and II.E.7 (discussing these references). Patent Owner argues that

> [c]ommon sense dictates that Regeneron and Dr. Yancopoulos (the company's Chief Scientific Officer and the patent's sole inventor) completed those trials and perfected the invention before the results were reported. That means those references are not prior art, both because the invention was conceived and reduced to practice before the reference was published, and

> because the relied-upon disclosures were derived from the inventor himself.

Id.

Because Petitioner expressly takes the position that all asserted references are prior art (and, on their face, each appears to be) and Patent Owner presents the argument that certain references are not prior art because they reflect the inventor's own work and were published within the one-year grace period afforded by 35 U.S.C. § 102(b), the burden shifts to Patent Owner to produce evidence that the claimed invention occurred before the publication dates of the respective references. *See Dynamic Drinkware*, 800 F.3d at 1379–80; *In re Magnum Oil Tools Int'l, Ltd.*, 829 F.3d 1364, 1375–76 (Fed. Cir. 2016).

Such evidence may include "either an earlier reduction to practice, or an earlier conception followed by a diligent reduction to practice." *Purdue Pharma L.P. v. Boehringer Ingelheim GmbH*, 237 F.3d 1359, 1365 (Fed. Cir. 2001). The sufficiency of corroboration is determined according to a rule-of-reason analysis, where "all pertinent evidence is examined in order to determine whether the inventor's story is credible." *Fleming v. Escort Inc.*, 774 F.3d 1371, 1377 (Fed. Cir. 2014) (quoting *Sandt Tech., Ltd. v. Resco Metal & Plastics Corp.*, 264 F.3d 1344, 1350 (Fed. Cir. 2001)); *see also Price v. Symsek*, 988 F.2d 1187, 1195 (Fed. Cir. 1993).

Patent Owner's arguments and evidence regarding each reference are basically the same and each foundationally relies on the following facts: (1) the '572 patent being accorded priority to the '836 provisional's January 21, 2011, filing date; (2) Dr. George Yancopoulos, the only inventor named on the face of the '572 patent, being the true sole inventor; (3) each respective reference disclosing Dr. Yancopoulos's own work (or work on his

behalf, under his direction) and being reports on clinical trials (called DA VINCI and VIEW) testing the claimed invention; (4) the "common sense" notion that any reports of patient outcomes (i.e., results) from these clinical trials that fall within the scope of the claimed invention (had to have first been conceived) reflect actual reductions to practice, which had to have occurred prior to the reporting and publication thereof; (5) Dr. Yancopoulos was the designer of the clinical trials' treatment protocols, and informed of and aware of their results and the intended publication thereof prior to such publication; and (6) the references' publication dates were each less than one year before the January 21, 2011, priority date. *See* Prelim. Resp. 2, 20–28, 40–44, 48.

As discussed above, we agree with Patent Owner that the '572 patent should be accorded priority to January 21, 2011. *See supra* Section II.C. The publication date on the face of Dec. 2010 PR is December 20, 2010. Ex. 1006, 1. The publication date on the face of Nov. 2010 PR is November 22, 2010. Ex. 1007, 1. The publication date on the face of 2010 ARVO is April 2010. Ex. 1010, 1. Each publication date is less than a year before the priority date.

None of these challenged references names Dr. Yancopoulos as an author nor credits him directly with any part of the subject matter disclosed therein, even if they quote his statements on clinical trials and identify him as the "President of Regeneron Research Laboratories." Ex. 1006; Ex. 1007; Ex. 1010.

From the evidence of record, it appears that Dr. Yancopoulos certainly had a part in developing the DA VINCI and VIEW clinical trials, which embodied the drug dosing protocol of the claimed invention. *See* Prelim.

Resp. 23; Ex. 2003, 137:3–6 (Dr. Yancopoulos testifying he initiated and drove the dosing regimen "strategy"); 150:19–21 (Dr. Yancopoulos testifying he "played a major role in designed the experiments and working with everybody else to carry them out and analyze the data"), 1231:7–15 (testimony that Dr. Yancopoulos played a very hands-on role and was personally involved in all research and development, including of aflibercept); Ex. 2009; Ex. 2010; Ex. 2011; Ex. 2015; Ex. 2018; Ex. 2019; Ex. 2035; Ex. 2039; Ex. 2040; Ex. 2041; Ex. 2042; Ex. 2043. At this stage, we have no testimony from Dr. Yancopoulos in this proceeding to specifically corroborate that he is the sole inventor of the claimed invention or that the work and results reported in the disputed evidence was his actual reduction to practice.

Furthermore, the challenged references themselves and other evidence of record appear to disclose that the clinical trials were conducted by, and the VEGF Trap-Eye drug was developed by, both of Regeneron ***and Bayer HeathCare***, for the potential treatment of eye diseases, including wet AMD and DME. *See* Ex. 1005; Ex. 1006; Ex. 1007; Ex. 1009, 1575; *see also* Prelim. Reply 4–9. Moreover, even in view of all the evidence currently of record, Patent Owner can only really state that Dr. Yancopoulos "'[P]layed a major role in designing' and carrying out the VIEW trial" and "'[u]ltimately it was [Dr. Yancopoulos's] decision to move forward with the final study design' for VIEW." Prelim. Resp. 27–28 (alterations are Patent Owner's).

In view of the above, we find some evidence strongly supports Patent Owner's argument. But, on the limited record before us, we find this to very much be an open question and are not persuaded that Exhibits 1006, 1007, and 1010 are not prior art. The record on this is not conclusive as to

Dr. Yancopoulos's challenged status as sole inventor or that any actual reduction to practice before the references' publications was his. Should Patent Owner maintain this argument, we will consider the mature record at trial, including any testimony offered by Dr. Yancopoulos himself, and then make a determination as to the prior art status of the Dec. 2010 PR (Ex. 1006), Nov. 2010 PR (Ex. 1007), and 2010 ARVO (Ex. 1010) references.

G. PETITIONER'S PATENTABILITY CHALLENGES

As summarized above, Petitioner asserts eleven grounds for the unpatentability of the claims of the '572 patent. *See supra* Section I.D; *see also* Pet. 6–7. We review Petitioner's challenges and Patent Owner's arguments below.

1. Anticipation of Claims 15 and 24 by 2009 PR or Dec. 2010 PR (Ground 1)

Under Ground 1, Petitioner asserts that independent claim 15 and claim 24, which depends therefrom, are anticipated by 2009 PR or are anticipated by Dec. 2010 PR. Pet. 28–31 (citing, *inter alia*, Ex. 1002 ¶¶ 139–144). As noted above at Section II.F, whether Dec. 2010 PR is prior art is an open question and one we expect to be resolved upon a mature record (unless Petitioner expressly withdraws its challenges thereover or Patent Owner abandons the argument). Therefore, at this stage we will not address the merits of this patentability challenge as it relates to Dec. 2010 PR; we find it is not required for us to institute trial. We follow this same course for other challenges reliant upon this and other references contended not to be prior art. We turn to Petitioner's challenge based upon 2009 PR.

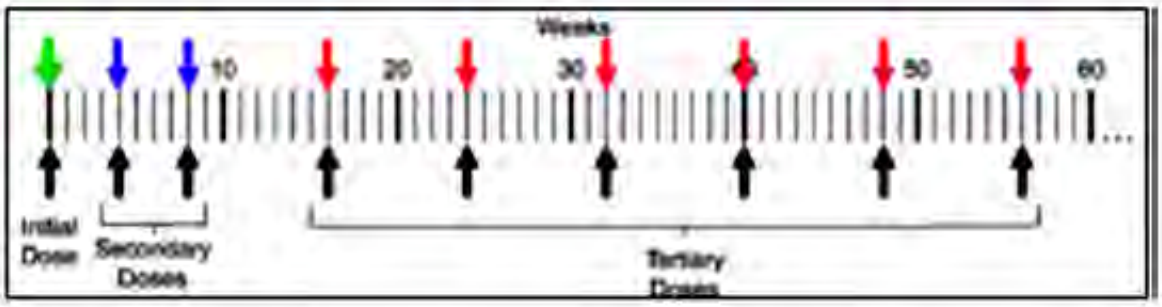
Petitioner asserts that independent claim 15 is directed to treating a patient with DME with the 2 mg aflibercept dosing regimen of all claims,

but, "[u]nlike the other independent claims of the '572 patent, claim 15 does not specify that a patient maintain or gain visual acuity," i.e., there is no *results limitation*. Pet. 29. On this, Petitioner asserts that

> [t]he 2009 Press Release discloses treating DME with three initial loading doses and then maintenance doses every 8 weeks. It states that "VEGF Trap-Eye is . . . in Phase 2 development for the treatment of Diabetic Macular Edema (DME). VEGF-Trap dosed at . . . ***2 mg every eight weeks after three monthly loading doses*** . . . is being compared to focal laser treatment."

Id. (citing Ex. 1005, 1). Petitioner asserts that "[i]t was understood and known at the time that VEGF Trap-Eye and aflibercept were the same drug." *Id.* at 31 n.5 (citing Ex. 1002 ¶¶ 50–57, 143; Ex. 1009, 3; Ex. 1011; Ex. 1015; Ex. 1038, 3–5).

As for claim 24, Petitioner states that it requires "'only two secondary doses are given'—i.e. the patient is administered three initial loading doses and then maintenance doses every 8 weeks," notes the "three initial loading doses" disclosed by 2009 PR, and includes the following annotated graphic from the '572 patent illustrating the concept:



Id. at 29–30 (citing Ex. 1002 ¶ 142). Petitioner states that this is the "sole figure from the '572 patent" and illustrates an initial dose at a green arrow,

two secondary doses at blue arrows, and tertiary doses at red arrows, as disclosed by 2009 PR and described in the '572 patent—"precisely the dosing regimen recited by claims 15 and 24." *Id.*

Patent Owner argues that 2009 PR does not anticipate claims 15 and 24 because claim 15's preamble is conceded to be limiting and requires administering the drug to a patient for the purpose of improving or providing a beneficial effect on their angiogenic eye disorder. Prelim. Resp. 48 (citing Pet. 18). Patent Owner argues Petitioner fails to address how 2009 PR discloses drug administration for this purpose and that Petitioner's witness, Dr. Chaum, provides only conclusory opinion on the matter. *Id.* at 48–49.

At this stage of the proceeding, we agree with Petitioner's position and find the merits of ground 1 compelling (without more, this is sufficient to institute trial).

It is without question that 2009 PR discloses the claimed dosing regimen, more than once, in fact (once for treating AMD and then regarding treating DME). Ex. 1005. Regarding the purpose of administering aflibercept to patients, 2009 PR expressly states "VEGF Trap-Eye is also in Phase 2 development ***for the treatment of Diabetic Macular Edema (DME)***," which we find discloses the purpose of claim 15's preamble of "treating diabetic macular edema in a patient in need thereof." Ex. 1001, 23:53–54; Ex. 1002 ¶ 134; Ex. 1009, 1.

We determine that Petitioner has met its burden in establishing a reasonable likelihood that it would prevail in establishing the challenged claims 15 and 24 are unpatentable under 35 U.S.C. § 102 over 2009 PR.

2. Anticipation of Claims 1–5, 8–11, 16, 17, 20, and 21 by Dec. 2010 PR (Ground 2)

Under Ground 2, Petitioner asserts that independent claim 1, claims 2–5 and 8–11 depending therefrom, and claims 16, 17, 20, and 21 depending from independent claim 15, are anticipated by Dec. 2010 PR. As noted above, at this stage we will not address the merits of this patentability challenge as it relates to Dec. 2010 PR, which Patent Owner disputes is prior art; we find it is not required for us to institute trial.

3. Anticipation of Claims 26–30 by Nov. 2010 PR (Ground 3)

Under Ground 3, Petitioner asserts that independent claims 26 and 29, and claims 27, 29, and 30 depending therefrom, are anticipated by Nov. 2010 PR. As noted above, at this stage we will not address the merits of this patentability challenge as it relates to Nov. 2010 PR, which Patent Owner disputes is prior art; we find it is not required for us to institute trial.

4. Obviousness of Claims 1–5, 8–11, and 26–30 Over Dixon and 2006 PR (Ground 4)

Under Ground 4, Petitioner asserts that independent claims 1, 26, and 29, and claims 2–5, 8–11, 27, 28, and 30 depending therefrom, would have been obvious over Dixon and 2006 PR. Pet. 39–46 (citing, *inter alia*, Ex. 1002 ¶¶ 162–176, 178–183; Ex. 1009, 1573, 1575–77; Ex. 1027, 2). Petitioner states that "Dixon discloses all of the limitations of independent claims 1, 26, and 29, other than the 'results limitations.'" *Id.* at 39 (citing Ex. 1002 ¶¶ 162–165). Petitioner asserts Dixon teaches the claimed treatment of a patient with AMD by the recited 2 mg aflibercept VEGF Trap-Eye) injection regimen (i.e., initial dose, at least one secondary dose, at least one tertiary dose). *Id.* (citing Ex. 1009, 1573, 1575–77). Petitioner asserts that, "[w]hile Dixon does not expressly disclose the 'results

limitations' of independent claims 1, 26, or 29 or their dependents, it renders them obvious alone or in view of the knowledge of a POSA regarding aflibercept efficacy." *Id.* at 40 (citing Ex. 1002 ¶¶ 162–165).

Concerning independent claim 1 and its dependent claims, Petitioner asserts,

> there is no requirement that a patient maintain any visual acuity gain for a set duration—only that the patient "achieves the gain ***within***" the recited time period—here 52 weeks. Nor is there any requirement that every patient achieve the recited gain, only that such gains would be obvious for some patients receiving the dosing regimen—i.e. for "a patient."

Id. (citing Ex. 1002 ¶¶ 166–167). Petitioner asserts that, as evidenced by 2006 PR, the ordinarily skilled artisan would have known and expected that just a single 2 mg dose of aflibercept in AMD patients would have produced a gain in visual acuity within the 52 week period, i.e., a mean improvement of 13.5 letters and possible 15 or more letters by six weeks. *Id.* at 41 (citing Ex. 1027, 2; Ex. 1002 ¶¶ 168–169). Petitioner asserts that such expected results, i.e., gains in visual acuity measured by BCVA according to the ETDRS score, teach the limitations and surpass the results required by claims 2–4, 8–18. *Id.* at 42 (citing Ex. 1002 ¶¶ 170–174; Ex. 1009, 1576; Ex. 1006, 3; Ex. 1027). And, regarding dependent claims 5 and 11 requiring "only two secondary doses," Petitioner asserts Dixon's disclosure of three monthly loading doses teaches this. *Id.* at 43 (citing Ex. 1009, 1576; Ex. 1002 ¶ 175).

Regarding independent claims 26 and 29 and their dependent claims, Petitioner asserts that the same evidence from Dixon and 2006 PR renders obvious these claims' *results limitations* directed to the method being "as effective" in either achieving a *gain* or *maintenance* in visual acuity as

monthly administration of 0.5 ranibizumab in AMD patients "at 52 weeks." *Id.* at 43–46. For claim 26, "Petitioner assumes that to be 'as effective' as monthly ranibizumab, a patient must achieve a gain of visual acuity between 8.1-9.4 letters, as reported in Table 1 of the '572 patent," which Dixon demonstrates by patients that achieved a mean of 9 letter gains, and many patients gaining 15, and for claim 29 Petitioner asserts that if patients experience gains in visual acuity, that shows greater effectiveness than mere maintenance of vision above a loss of fewer than 15 letters with respect to the ranibizumab treatments. *Id.* at 44–46 (citing Ex. 1001, 13:5-35; Ex. 1002 ¶¶ 178–181; Ex. 1009, 1576)."

Patent Owner criticizes Petitioner's challenge because it mixes and matches the procedures and results of three different clinical trials with different dosing regimens (all discussed in Dixon, however). Prelim. Resp. 28. Patent Owner also argues that Dixon's disclosure of the claimed dosing regimen was prior to the return of any results, hence its conceded failure to expressly disclose the *results limitations*. *Id.* at 29.

We do not find this persuasive. Dixon discloses each Regeneron clinical trial to that point (Phase 1 CLEAR-IT-1; Phase 2 CLEAR-IT-2; Phase 3 VIEW1/2) testing aflibercept on AMD patients and when determining obviousness, "the prior art as a whole must be considered. The teachings are to be viewed as they would have been viewed by one of ordinary skill." *In re Hedges*, 783 F.2d 1038, 1041 (Fed. Cir. 1986). The obviousness analysis "can take account of the inferences and creative steps that a person of ordinary skill in the art would employ." *KSR*, 550 U.S. at 418. "A person of ordinary skill is also a person of ordinary creativity, not an automaton." *Id.* at 421.

We find it reasonable, as Petitioner asserts, for the person of ordinary skill in the art to have looked across the breadth of clinical trials disclosed in Dixon and 2006 PR to identify the results of administering 2 mg of aflibercept in the manner claimed in the '572 patent. *See* Pet. 40–41. Petitioner points to visual acuity gains exhibited in an AMD patient after a single dose of 2 mg aflibercept, which would have been the same as the initial dose of the VIEW 1/2 study and the claimed method, as illustrating that, on average, such patients experienced a gain of 13.5 letters and some patients gained as many as 15 letters, at six weeks, which Petitioner argues is "within 52 weeks," as required by claim 1.

On the present record, we agree with Petitioner's reading of claim 1 and the combination of Dixon and 2006 PR, and find the Petition presents compelling merits concerning the obviousness of claims 1–5 and 8–11 over Dixon and 2006 PR.

Patent Owner also invokes the Board's rationale from our decision denying institution in related case, IPR2022-01524, where we found there was insufficient evidence to establish the inherency, and show anticipation, of the claimed *results limitations* from the prior art's dosing regimen alone. *Id.* at 29–30. In particular, Patent Owner argues that the evidence showed and continues to show that some patients (at least 4–5%, or more) would not experience the results (gains) from the claimed method, and also that prior art dosing regimens and doses different from the claimed method were weak evidence of expected results. *Id.* at 30–34.

These arguments are also not persuasive. The arguments in this case, presented in this Petition, are not the same as those from the prior IPR. In the prior case, the challenge was premised on anticipation and there was a

scarcity of evidence concerning the inherency theory upon which that petition relied. Here, the challenge is premised on obviousness and Petitioner points out, at least concerning independent claim 1, that so long as some patients were shown to achieve the claimed result of vision acuity gain within 52 weeks, the claimed result was obvious.

The Federal Circuit has explained that when a claimed method is asserted to be obvious and the claim requires some result, perfect performance in the prior art is not required. *Hewlett-Packard Co. v. Mustek Systems, Inc.*, 340 F.3d 1314 (Fed. Cir. 2003). *Hewlett-Packard* involved a claim requiring a scanner to perform a scan that corresponded to a portion of a preview scan image to produce a final scan image, and the patent owner there argued that, because the relevant scan by the prior art scanner did not always so-correspond, the prior art could not anticipate or render the claim obvious. *Id.* at 1326. The Federal Circuit disagreed, stating:

> Just as "an accused product that sometimes, but not always, embodies a claimed method nonetheless infringes," *Bell Communications Research, Inc. v. Vitalink Communications Corp.,* 55 F.3d 615, 622–623 (Fed. Cir. 1995), a prior art product that sometimes, but not always, embodies a claimed method nonetheless teaches that aspect of the invention.

Id. The prior art in that case *sometimes* produced the required correspondence in claimed way and the claim was held to be obvious. *Id.*

A similar circumstance and outcome were the subject of *Unwired Planet, LLC v. Google Inc.*, 841 F.3d 995 (Fed. Cir. 2016). There, a patent's sole independent claim required the result of "farther-over-nearer ordering in the context of wireless location-based services through a series of method steps." *Id.* at 998. The asserted prior art was established to "sometimes" do this and the patent owner there argued that sometimes was not enough to

show the result was obvious—an argument again rejected by the Federal Circuit "because combinations of prior art that sometimes meet the claim elements are sufficient to show obviousness." *Id.* at 1002 (citing *Hewlett-Packard*, 340 F.3d at 1326). The Federal Circuit found that the required result would often occur and it did not matter that it did not always occur—"sometimes" was sufficient for a conclusion of obviousness. *Id.*

Such arguments were not made in IPR2022-01524, but Petitioner makes such an obviousness argument here and, at this stage of the proceeding, we are persuaded at least as to challenged claim 1 and its dependent claims. We find this ground compelling on the merits as to these claims.

At this stage of the proceeding, however, we are not as convinced over Petitioner's case regarding the obviousness of claims 26–30.

As identified by both parties, independent claims 26 and 29 require their respective claimed *gains* or *maintenance* in visual acuity (as effective as ranibizumab treatment) "through 52 weeks." Pet. 43–46. We noted above that visual acuity gains were certainly reported after just a single dose of aflibercept at 2 mg and this may be sufficient to show such results "within 52 weeks," as required by claim 1. But, we are not convinced at this stage of the proceeding that this also establishes the *results limitations* of claims 26 and 29 requiring gains or maintenance *through* 52 weeks.

The single 2 mg aflibercept dose improvement disclosed by Dixon/2006 PR may be sufficient to show that a result at least sometimes occurs *within* 52 weeks, but the result of claims 26 and 29 appears to be required *at the 52 week mark*. Petitioner does assert that Dixon discloses PRN dosing and administering additional injections through 52 weeks. *See*

Pet. 44. We take this to mean that such additional, as needed, doses would have been obvious to administer to achieve the mean 9 letter gains (or more), but find there is some ambiguity on these points. Therefore, this is an issue that could be further developed at trial.

To summarize, we determine that Petitioner has met its burden in establishing a reasonable likelihood that it would prevail in establishing at least one of claims 1–5, 8–11, and 26–30 are unpatentable under 35 U.S.C. § 103(a) over Dixon and 2006 PR.

5. Obviousness of Claims 16, 17, 20, and 21 Over 2009 PR, 2007 ARVO, Dixon, 2010 ARVO (Ground 5)

Under Ground 5, Petitioner asserts that dependent claims 16, 17, 20, and 21, which depend from independent claim 15, would have been obvious over 2009 PR, 2007 ARVO, Dixon, 2010 ARVO. As noted above, at this stage of the proceeding we will not address the merits of this patentability challenge as it relates to 2010 ARVO, which Patent Owner disputes is prior art; we find it is not required for us to institute trial.

As discussed above, independent claim 15 does not recite any *results limitations,* however, results are the subject of dependent claims 16, 17, 20, and 21, with claim 16 depending from 15 and requiring a gain in visual acuity within 52 weeks following the initial dose, claim 17 depending from 16 and requiring a gain of at least 9 letters, claim 20 depending from 17 requiring a gain in visual acuity within 24 weeks following the initial dose, and claim 21 depending from 16 and requiring a gain of at least 8 letters. Ex. 1001, 23:65–67 (claim 16), 24:1–4 (claim 17); 24:10–16 (claims 20 and 21).

Petitioner asserts that 2009 PR discloses all the method steps of independent claim 15 (*see supra* Section II.G.1) directed to treating DME in

a patient. Pet. 46. Considering the most extreme results required by claims 16, 17, 20, and 21, Petitioner efficiently argues that if the prior art renders obvious a gain of 9 letters within 24 weeks in a DME patient, this would cover each claim and render each obvious. *Id.* at 47.

Petitioner asserts that 2009 PR discloses the VIEW 1 trial and its endpoint—AMD patients gaining at least 15 letters—and the Phase 2 trial and its endpoint—improvement in visual acuity in six months—and that these endpoints would have led the ordinarily skilled artisan to have expected similar improvements for at least some patients, as claimed. *Id.* at 47–48 (citing Ex. 1005, 1; Ex. 1002 ¶¶ 184–190). As support, Petitioner asserts that 2007 ARVO and Dixon disclose a single *4 mg* aflibercept dose in DME patients produced 9 letters gained at four weeks and argues that the ordinarily skilled artisan would have reasonably expected the same gain from an initial 2 mg dose in the context of AMD trials. *Id.* at 48 (citing Ex. 1009, 1575; Ex. 1030; Ex. 1002 ¶ 189). Petitioner's witness testifies that DME and AMD share similar mechanisms of action, i.e., formation of abnormal blood vessels in the macula, and that an effective treatment for one would be expected to be effective for the other. Pet. 48; Ex. 1002 ¶¶ 43–49, 188.

Patent Owner disputes the proposition that AMD and DME patients are interchangeable or that treatment of one such type of patient would inform someone as to the efficacy of the claimed or prior art method for the other. Prelim. Resp. 39. Patent Owner argues that clinical trial endpoints do not dictate that patients will meet such endpoints. *Id.* Patent Owner also argues that the *4 mg* dose from Regeneron's Phase 1 trial for DME patients does not teach the claimed method requiring just half that dose (2 mg). *Id.* at

40 (citing Ex. 1009, 1575; Ex. 1030; Ex. 1031, 1). (Patent Owner also presents an inherency argument as presented over Ground 4 and argues 2010 ARVO is not prior art, which we've addressed above).

At this stage we are uncertain that claims 16, 17, 20, and 21 are shown to have been obvious under this ground. On the present record, we agree with Patent Owner that clinical trial endpoints are not necessarily evidence of achieved or even expected results, and also agree that a 4 mg dose is not the same as a 2 mg dose and are not persuaded that results from the former can render results from the latter obvious. It is our understanding that a clinical trial endpoint is akin to a goal of a study and is merely an analyzed parameter, which is different from an outcome that reflects actual results. Moreover, based on the present record, we are unsure that a 4 mg dose of aflibercept, which is twice that of the claimed dose, would have been relied upon by the ordinarily skilled artisan to predict the results of administering the claimed dose.

The issues regarding this ground may be further developed at trial.

6. Obviousness of Claims 6, 7, 12, and 13 Over Dixon, Hecht, 2006 PR, Dec. 2010 PR (Ground 7)

Under Ground 6, Petitioner asserts that dependent claims 6, 7, 12, and 13, which depend from independent claim 1, would have been obvious over Dixon, Hecht, 2006 PR, and Dec. 2010 PR. As noted above, at this stage of the proceeding we will not address the merits of this patentability challenge as it relates to Dec. 2010 PR, which Patent Owner disputes is prior art; we find it is not required for us to institute trial.

Dependent claims 6, 7, 12, and 13 are directed to the method of independent claim 1 (and claims 3 and 10), adding that aflibercept is

formulated as an isotonic solution or with a nonionic surfactant. Ex. 1001, 23:28–31, 23:45–48.

Petitioner asserts that Dixon and 2006 PR teach the method and *result limitation* of independent claim 1 and dependent claims 3 and 10. Pet. 49 (citing Ex. 1002 ¶¶ 191–194; and the Petition's discussion under Grounds 2 and 4). Petitioner asserts that Dixon discloses that the aflibercept formulation tested in its disclosed trials was "formulated with different buffers and at different concentrations (for buffers in common) suitable for the comfortable, non-irritating, direct injection into the eye," and that for such solutions it would have been obvious to use an isotonic and nonionic solution as taught by Hecht, which Hecht discloses make ophthalmic solutions stable, comfortable, less toxic, and enhance clarity. *Id.* at 49–50 (citing Ex. 1002 ¶¶ 192–194; Ex. 1009, 1575; Ex. 1016, 1569, 1571; Ex. 1032, 159; Ex. 1033, 1115).

Over this ground, Patent Owner makes the same argument concerning the prior art's lack of disclosure for the *results limitations* and argues that Dec. 2010 PR is not prior art. These issues have already been discussed above.

We determine that Petitioner has met its burden in establishing a reasonable likelihood that it would prevail in establishing at least one of claims 6, 7, 12, and 13 are unpatentable under 35 U.S.C. § 103(a) over Dixon, 2006 PR, and Hecht. We find the merits of this unpatentability challenge compelling at this stage of the proceeding.

7. Obviousness of Claims 18, 19, 22, and 23 Over Dec. 2010 PR, Hecht, 2009 PR, 2007 ARVO, Dixon, 2010 ARVO (Ground 7)

Under Ground 7, Petitioner asserts that dependent claims 18, 19, 22, and 23, which depend from independent claim 15 (and 16, 17, and 21),

would have been obvious over Dec. 2010 PR, 2009 PR, Hecht, 2007 ARVO, Dixon, and 2010 ARVO. As noted above, at this stage of the proceeding we will not address the merits of this patentability challenge as it relates to Dec. 2010 PR or 2010 ARVO, which Patent Owner disputes are prior art; we find such is not required for us to institute trial.

Dependent claims 18, 19, 22, and 23 are directed to the method of independent claim 15 (and claims 16, 17, and 21), adding that aflibercept is formulated as an isotonic solution or with a nonionic surfactant. Ex. 1001, 23:28–31, 23:45–48.

Concerning the method of claim 15 and results required by claims 16, 17, and 21, Petitioner invokes its arguments presented under Grounds 2 and 5. Pet. 51. We explained above that we will not consider the merits of Ground 2 at this time. *See supra* Section II.G.2. Furthermore, we explained above that we are uncertain as to Petitioner's challenge under Ground 5. *See supra* Section II.G.5. Therefore, we are equally uncertain of the merits of this Ground for the same reasons. The issues relating to this Ground may be further developed at trial.

8. Obviousness of Claim 14 Over Dixon, Dec. 2010 PR, CATT/PIER (Ground 8)

Under Ground 8, Petitioner asserts that dependent claim 14, which depends from independent claim 1, and is directed to *exclusion criteria* for the method of claim 1, would have been obvious over Dixon, Dec. 2010 PR, and CATT/PIER. Pet. 51–52 (citing Ex. 1002 ¶¶ 65–69, 196–203). As noted above, at this stage of the proceeding we will not address the merits of this patentability challenge as it relates to Dec. 2010 PR, which Patent Owner disputes is prior art; we find such is not required for us to institute trial.

Petitioner cites to its unpatentability arguments over Dixon and 2006 PR under Ground 4, discussed above, and asserts that, although Dixon does not disclose the claimed *exclusion criteria*, such was well known as disclosed in CATT/PIER. *Id.* (citing Exs. 1020–1026).

We determined above that claim 14's recited *exclusion criteria* should be accorded no patentable weight and is not limiting under the printed matter doctrine. *See supra* Section II.B.3. On this, at this stage of the proceeding, the parties agree.

Therefore, we find that Petitioner has met its burden in establishing a reasonable likelihood that it would prevail in establishing that claim 14 is unpatentable under 35 U.S.C. § 103(a) over Dixon and 2006 PR (Ground 4). We find the merits of this unpatentability challenge compelling at this stage of the proceeding.

9. Obviousness of Claim 25 Over 2009 PR, Shams, Elman 2010 (Ground 9)

Under Ground 9, Petitioner asserts that claim 25, which is directed to the method of independent claim 15 and further requires "four secondary doses," would have been obvious over 2009 PR, Shams, and Elman 2010. Pet. 52–56 (citing Ex. 1001, 4:22–32; Ex. 1002 ¶¶ 58–61, 204–237; Ex. 1005; Ex. 1009; Ex. 1017, 23–24; Ex. 1018, 4; IPR2023-00739, Paper 9 (Institution Decision)). Petitioner asserts that a round of five first doses (an initial and four secondary), as opposed to 2009 PR's disclosed three loading doses, would have been obvious as routine dosing optimization, as taught by the PRN (as needed) regimen of the refence. *Id.* at 53–54. As support, Petitioner points to Shams and Elman 2010, which disclose adjusting initial dose numbers to produce a desired therapeutic effect. *Id.* at 54–55 (citing Ex. 1017, 23–24; Ex. 1018, 4).

Patent Owner argues 2009 PR is merely prospective and did not involve any dosing regimens as required by claim 25. Prelim. Resp. 45. Patent Owner also argues that the ordinarily skilled artisan would not have added loading doses, as required by the claim, but would have reduced their number from the three disclosed by 2009 PR. *Id.* Patent Owner also argues that Shams and Elman 2010 would not have motivated the ordinarily skilled artisan to modify the regimen of 2009 PR because Shams reported on a failed trial and Elman 2010, although indicating patients could receive more than the fixed three secondary doses upon assessment, does not suggest doing so. *Id.* at 45–47.

At this stage of the proceeding, we agree with Petitioner's position. We find that 2009 PR's disclosure of a PRN arm alongside the three loading doses followed by 8-week dosing arm is motivation enough for the skilled artisan to have optimized the regimen by adding loading doses to obtain desired patient results. *See* Ex. 1005, 1; Ex. 1002 ¶¶ 205–207. Therefore, we find that Petitioner has met its burden in establishing a reasonable likelihood that it would prevail in establishing that claim 25 is unpatentable under 35 U.S.C. § 103(a) over 2009 PR, Shams, and Elman 2010.

10. Anticipation of Claims 1–5, 8–11, and 26–30 by Dixon if the "Results Limitations" Lack Patentable Weight (Ground 10)

Under Ground 10, Petitioner asserts that if the *results limitations* are not entitled to patentable weight, Dixon anticipates the challenged claims. Pet. 56–61. On the present record, we have determined that the *results limitations* are entitled to patentable weight, which renders this ground moot. *See supra* Section II.B.4.

11. Anticipation of Claims 1–5, 8–11, 16, 17, 20, and 21 by 2009 PR if the "Results Limitations" Lack Patentable Weight (Ground 11)

Under Ground 11, Petitioner asserts that if the *results limitations* are not entitled to patentable weight, 2009 PR anticipates the challenged claims. Pet. 56–61. On the present record, we have determined that the *results limitations* are entitled to patentable weight, which renders this ground moot. *See supra* Section II.B.4.

III. DISCRETIONARY DENIAL

Patent Owner presents arguments that we should exercise our discretion to deny institution in this proceeding. As explained below, we are not persuaded by any of these arguments and will not deny institution.

A. DISCRETIONARY DENIAL UNDER 35 U.S.C. § 314(A) AND *FINTIV*

Patent Owner argues that we should exercise our discretion under 35 U.S.C. § 314(a) to deny the Petition in light of the District Court Litigation. Prelim. Resp. 49–54. The litigation referenced by Patent Owner is the Northern District of West Virginia litigation discussed above, and, as noted above, the District Court bench trial is complete and the parties await the Court's judgment. *See supra* Section I.B.

Section 314(a) states that

> [t]he Director may not authorize an inter partes review to be instituted unless the Director determines that the information presented in the petition filed under section 311 and any response filed under section 313 shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.

Under § 314(a), we have discretion to deny institution of an *inter partes* review. *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2140 (2016).

We consider the following factors when determining whether to deny institution under § 314(a) based on a parallel district court proceeding:

> 1. whether the court granted a stay or evidence exists that one may be granted if a proceeding is instituted;
>
> 2. proximity of the court's trial date to the Board's projected statutory deadline for a final written decision;
>
> 3. investment in the parallel proceeding by the court and the parties;
>
> 4. overlap between issues raised in the petition and in the parallel proceeding;
>
> 5. whether the petitioner and the defendant in the parallel proceeding are the same party; and
>
> 6. other circumstances that impact the Board's exercise of discretion, including the merits.

Apple Inc. v. Fintiv, Inc., IPR2020-00019, Paper 11 at 5–6 (PTAB Mar. 20, 2020) (precedential) ("*Fintiv*"). We also consider "clarifications" made by the Director of the United States Patent and Trademark Office ("USPTO"). *See* USPTO Memorandum, Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings with Parallel District Court Litigation (June 21, 2022) at 2 ("*Fintiv* Memo").[20] Such clarifications expressly include that PTAB will not rely on the *Fintiv* factors to deny institution where (1) a petition presents "compelling evidence of unpatentability" or (2) a petitioner presents a *Sotera* stipulation, and also that PTAB will consider the median

[20] Available at https://www.uspto.gov/sites/default/files/documents/interim_proc_discretionary_denials_aia_parallel_district_court_litigation_memo_20220621_.pdf.

time from filing to disposition when analyzing a parallel district court litigation's schedule.[21] *Id.*

1. Factor 1 – Whether the court granted a stay or evidence exists that one may be granted if a proceeding is instituted

Under the first *Fintiv* factor, we consider "whether the court granted a stay or evidence exists that one may be granted if a proceeding is instituted." *Fintiv*, Paper 11 at 6.

Regarding this factor, the district court trial is concluded, thus there is no question of whether a stay will be granted—there will be no stay.

As a result, we determine that the first *Fintiv* factor favors exercising our discretion to deny institution.

2. Factor 2 – Proximity of the court's trial date to the Board's projected statutory deadline for a final written decision

Under the second *Fintiv* factor, we consider the "proximity of the court's trial date to the Board's projected statutory deadline for a final written decision." *Fintiv*, Paper 11 at 6.

Regarding this factor, the district court trial is concluded, thus there is no question as to that trial's proximity to our deadlines in this proceeding—trial has preceded our final decision.

As a result, we determine that the second *Fintiv* factor favors exercising our discretion to deny institution.

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[21] *But cf. CommScope Techs. LLC. v. Dali Wireless, Inc.*, IPR2022-01242, Paper 23 (February 27, 2023) (precedential) (the Board must first address *Fintiv* factors 1–5, and should engage the compelling merits question only if that analysis favors discretionary denial; when addressing compelling merits, the Board must provide reasoning, beyond pointing to its analysis under the lower institution standard, to explain and support its determination, sufficient to allow for review of that decision).

3. Factor 3 – Investment in the parallel proceeding by the court and the parties

Under the third *Fintiv* factor, we consider the "investment in the parallel proceeding by the court and the parties." *Fintiv*, Paper 11 at 6. If, at the time of the institution decision, the district court has issued substantive orders related to the challenged patent, such as a claim construction order, this fact weighs in favor of denial. *See Fintiv*, Paper 11 at 9–10. On the other hand, if the district court has not issued such orders, this fact weighs against discretionary denial. *Id.* at 10.

Regarding this factor, the district court trial is concluded and a judgment is expected at any time, thus there is no question as to the parties' and Court's investment in that proceeding—the parties and the District Court have invested as much in that proceeding as is possible.

As a result, we determine that the third *Fintiv* factor favors exercising our discretion to deny institution.

4. Factor 4 – Overlap between issues raised in the petition and in the parallel proceeding

Under the fourth *Fintiv* factor, we consider the "overlap between issues raised in the petition and in the parallel proceeding." *Fintiv*, Paper 11 at 6.

Patent Owner states that, under this factor, the "overlap between issues raised in the petition and in the parallel proceeding—also favors denial. Like Petitioner, Defendants [in the district court] challenge the '572 claims based on Regeneron's DA VINCI and VIEW trials, relying on two of Petitioner's primary references: Dixon and the 2009 Press Release." Prelim. Resp. 51. We agree with Patent Owner that there is overlap in issues, in

particular, claims asserted to be invalid and prior art asserted against those claims.

However, we also find that there are important differences between the issues here and those under consideration before the District Court. As discussed above, the District Court's claim construction is not the same as our claim construction here because the Court found the *results limitations* to have no patentable weight, but we find they do have patentable weight. *See supra* Sections I.B (discussing related matters), II.B.4 (Claim Construction). Also, here every claim of the '572 patent is actively at issue, but in the District Court, most claims were stipulated to as being invalid and only a few claims were actively litigated. *Id.*

As a result, we determine that the fourth *Fintiv* factor may weigh marginally in favor of our exercising discretion to deny institution.

5. Factor 5 – Whether the petitioner and the defendant in the parallel proceeding are the same party

Under the fifth *Fintiv* factor, we consider "whether the petitioner and the defendant in the parallel proceeding are the same party." *Fintiv*, Paper 11 at 6.

Patent Owner acknowledges that "Petitioner [is] not involved in the parallel proceeding." Prelim. Resp. 53. But, Patent Owner argues that "[e]ven when a petitioner is unrelated to a defendant, . . . if the issues are the same as, or substantially similar to, those already or about to be litigated, or other circumstances weigh against redoing the work of another tribunal, the Board may, nonetheless, exercise the authority to deny institution." *Id.* at 44–45 (quoting *Fintiv* at 13–14; *Google LLC v. Personalized Media Comms*, LLC, IPR2020-00724, 2020 WL 6530785, at *3 (PTAB November 5, 2020). Patent Owner asserts that Petitioner has offered no persuasive reason "why

addressing the same or substantially the same issues would not be duplicative of the prior case." *Id*. at 54 (quoting *Fintiv* at 14).

We are not persuaded by Patent Owner's arguments. It is undisputed that Petitioner is not a party to the district court action, which we determine weighs very heavily against exercising our discretion to deny institution. Furthermore, we find that there are important differences between the issues being actively argued in this proceeding and those that were actively litigated in the district court, as noted above.

Thus, under these circumstances, we find that *Fintiv* factor 5 weighs heavily in favor of institution.

6. Factor 6 – Other circumstances that impact the Board's exercise of discretion, including the merits

Under the sixth *Fintiv* factor, we consider "other circumstances that impact the Board's exercise of discretion, including the merits." *Fintiv*, Paper 11 at 6. "[W]here the PTAB determines that the information presented at the institution stage presents a compelling unpatentability challenge, that determination alone demonstrates that the PTAB should not discretionarily deny institution under *Fintiv*." *Fintiv* Memo 4–5.

Patent Owner argues that the merits of the Petition are weak. Prelim. Resp. 53. Patent Owner argues that, even "if the merits of the grounds raised in the petition are a closer call," this factor "has favored denying institution when other factors favoring denial are present." *Id*. (quoting *Fintiv* at 15). We disagree.

As we have explained above, Petitioner has demonstrated a reasonable likelihood of success on the merits with respect to several grounds and, furthermore, we identified in our analysis above that we found the merits compelling for Grounds 1, 4, 6, and 8. *See supra* Sections II.B.1, II.B.4,

II.B.6, II.B.8. Therefore, for the reasons that we have explained above, we find that *Fintiv* factor 6 weighs heavily in favor of institution.

7. Summary

Based on our holistic view of the *Fintiv* factors, we decline to exercise our discretion under § 314(a) to deny the Petition.

B. DISCRETIONARY DENIAL UNDER 35 U.S.C. § 325(D) BASED ON IPR2022-01524 OR THE PROSECUTION OF U.S. APPLICATION 16/159, 282

Patent Owner argues that the Petition should be denied under 35 U.S.C. § 325(d). Prelim. Resp. 52–54, 63–65.

In determining whether to deny institution under § 325(d), we use the following two-part framework:

> (1) whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office; and
>
> (2) if either condition of [the] first part of the framework is satisfied, whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims.

Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH, IPR2019-01469, Paper 6 at 8 (PTAB Feb. 13, 2020) (precedential). The *Becton, Dickinson* factors provide useful insight into how to apply the framework under 35 U.S.C. § 325(d). *Id.* at 9 (referencing *Becton, Dickinson & Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8 at 17–18 (PTAB Dec. 15, 2017) (precedential as to § III.C.5, first paragraph)).

Under § 325(d), the art and arguments must have been previously presented to the Office during proceedings, such as examination of the underlying patent application, pertaining to the challenged patent. *Advanced*

Bionics, Paper 6 at 7. Previously presented art includes art made of record by the Examiner, and art provided to the Office by an applicant, such as on an Information Disclosure Statement ("IDS"), in the prosecution history of the challenged patent. *Id.* at 7–8.

1. Whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office

Under the first part of the *Advanced Bionics* framework, we consider "whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office." *Id.* at 8. We evaluate *Becton, Dickinson* factors (a), (b), and (d) to determine whether Petitioner has demonstrated material error. *Id.* at 10. Those factors are:

> (a) the similarities and material differences between the asserted art and the prior art involved during examination;
>
> (b) the cumulative nature of the asserted art and the prior art evaluated during examination; . . . [and]
>
> (d) the extent of the overlap between the arguments made during examination and the manner in which Petitioner relies on the prior art or Patent Owner distinguishes the prior art.

Becton, Dickinson & Co. v. B. Braun Melsungen AG, IPR2017-01586, Paper 8 at 17–18 (PTAB Dec. 15, 2017) (precedential as to § III.C.5, first paragraph).

Patent Owner argues that "[m]uch of the Petition relies on the same art and/or arguments that the Board considered and rejected in its March 2023 decision denying institution of Apotex's IPR[2022-01524] petition." Prelim. Resp. 55. And, Patent Owner further argues that "[e]ven though Petitioner relies on a variety of references not found in the Apotex petition,

Advanced Bionics part 1 is also satisfied because the Board considered and rejected 'substantially the same arguments' Petitioner relies on" in this proceeding. *Id.* at 56.

Regarding this prior IPR proceeding, Petitioner argues it "had nothing to do with Apotex's petition" and, here, it "challenges a new set of claims—the DME claims—in addition to those challenged in Apotex's petition by asserting a new set of arguments." Pet. 65–66.

On this issue, we find of most importance that, here, the arguments presented by Petitioner are not the same as those presented in IPR2022-01524. In the prior proceeding, a smaller set of claims was challenged (importantly, not claim 15, which has no *result limitation*), and those challenged were challenged on the basis of anticipation, not obviousness (at least not the independent claims). As we noted above, the evidence of anticipation by inherency was insufficient in that prior proceeding. Here, on the other hand, claims having *results limitations* are challenged on the basis of obviousness, claim 15 is challenged, and, on several grounds, we find compelling merits.

For these reasons, we are not persuaded that we should exercise our discretion under 35 U.S.C. § 325(d) to deny institution in view of IPR2022-01524.

Patent Owner also argues that during prosecution the Examiner allowed the claims that issued as the '572 patent after considering the prior art asserted here, namely Dec. 2010 PR, Nov. 2010 PR, 2009 PR, and Dixon. Prelim. Resp. 58. Although none of those references was the subject of an office action or any other communication from the Examiner, Patent Owner argues that during prosecution of related U.S. Application

16/159,282 (*see* Ex. 2053 (prosecution history of this application) a third party submitted Dixon and 2009 PR, along with claim chart(s) mapping the claims to the prior art, which was followed by anticipation rejections in that case over Dixon and 2009 PR. *Id.* at 58–59 (citing Ex. 2053, 99, 117–21, 128–29, 198–202). Patent Owner argues that this was all disclosed to the Examiner during the prosecution of the '572 patent. *Id.* (citing Ex. 1014, 1250).

Petitioner argues that during the prosecution of the '572 patent, the Examiner only issued non-statutory double patenting rejections, overlooking the §§ 102 and 103 issues presented by the prior art and never expressly considered the prior art asserted here, individually or in any combination. Pet. 63.

We find that almost all the references asserted here are listed on the face of the '572 patent as having been considered during prosecution. *See* Ex. 1001, code (56) (references cited, at pages 2, 4, 5, 6, 9). We find this sufficient to move on to the second question under *Advanced Bionics*.

2. Whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims

Under the second part of the *Advanced Bionics* framework, we consider "whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims." *Advanced Bionics*, Paper 6 at 8. "An example of a material error may include misapprehending or overlooking specific teachings of the relevant prior art where those teachings impact patentability of the challenged claims." *Id.* at 8 n.9. We evaluate *Becton, Dickinson* factors (c), (e), and (f) to determine

whether Petitioner has demonstrated material error. *Id.* at 10. Those factors are:

> (c) the extent to which the asserted art was evaluated during examination, including whether the prior art was the basis for rejection; . . .
>
> (e) whether Petitioner has pointed out sufficiently how the Examiner erred in its evaluation of the asserted prior art; and
>
> (f) the extent to which additional evidence and facts presented in the Petition warrant reconsideration of the prior art or arguments.

Becton, Dickinson, Paper 8 at 17–18.

Regarding prosecution of the '572 patent, Patent Owner argues that no material error occurred because the Board denied institution in IPR2022-01524, pointing, in particular, to our determination there that the *results limitations* have patentable weight. Prelim. Resp. 55–58. We fail to see how our decision in this previous IPR has any bearing on the Examiner's determinations during prosecution; Patent Owner does not allege that the Examiner of the '572 patent considered our institution decision or any portion of the record of IPR2022-01524, nor did the Examiner expressly address the same legal questions that were at issue in the IPR.

Patent Owner also argues that the Examiner did not err during prosecution in making only obviousness-type double patenting rejections and not rejecting the claims over any of the references asserted by Petitioner. *Id.* at 62. Patent Owner's position is that the Examiner knew about these references, at least from considering them in a related application, and made the correct decision not to reject the claims thereover. *Id.*

Petitioner argues the Office made clear errors in evaluating the prior art during prosecution of the '572 patent, which led to the Examiner failing to make an obviousness rejection over 2009 PR or Dixon, or Nov. and Dec. 2010 PR. Pet. 64–65.

We agree with Petitioner that the Examiner committed error in failing to make any rejections over the references asserted here. As noted above, certain of Petitioner's grounds for unpatentability present compelling merits and had the Examiner correctly evaluated the asserted references, a rejection under § 102 or § 103 would have been made.

Accordingly, we determine that Petitioner demonstrates that the Office erred in a manner material to the patentability of the challenged claims.

3. Summary

For the reasons discussed above, we decline to exercise our discretion under § 325(d) to deny the Petition.

IV. CONCLUSION

Petitioner demonstrates a reasonable likelihood of prevailing at trial in showing that at least one of claims 1–30 of the '572 patent is unpatentable over the cited prior art. Our decision derives from our review of the preliminary record before us. Accordingly, we institute *inter partes* review of all claims of the '572 patent on each ground asserted by Petitioner. This decision does not reflect a final determination on the patentability of the claims.

V. ORDER

Accordingly, it is hereby:

ORDERED that the Petition is granted and we institute *inter partes* review of claims 1–30 of the '572 patent based on the grounds asserted in the Petition; and

FURTHER ORDERED that, pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4(b), *inter partes* review of the '572 patent will commence on the entry date of this Order, and notice is hereby given of the institution of a trial.

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