

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

HS HYOSUNG ADVANCED MATERIALS CORP.,

Petitioner,

v.

KOLON INDUSTRIES, INC.,

Patent Owner.

Case No. IPR2025-00662

U.S. Patent No. 9,789,731

**PETITIONER'S RESPONSE TO PATENT OWNER'S REQUEST FOR
DISCRETIONARY DENIAL OF INSTITUTION**

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EXHIBIT LIST

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1003	Declaration of Jon Rust, Ph.D.
1004	<i>Curriculum Vitae</i> of Jon Rust, Ph.D.
1005	Japanese Patent No. 2009-68549 (“Tamura”)
1006	Certified Translation of Japanese Patent No. 2009-68549 (“Tamura”)
1007	U.S. Patent Pub. No. 2009/0090447 (“Baldwin”)
1008	Certified Translation of Korean Patent Disclosure No. 10-0245520 (“Baek”)
1009	U.S. Patent Pub. No. 2009/124149 (“Barnes”)
1010	European Patent Pub. No. 0405887A1 (“Buchanan”)
1011	U.S. Patent Pub. No. 2004/0108037 (“Osborne”)
1012	Certified Translation of Korean Patent Disclosure No. 10-2006-0126101 (“Chung”)
1013	Certified Translation of Japanese Patent Publication No. 2007-216778 (“Harikae”)
1014	U.S. Patent Pub. No. 2010/0071826 (“Yokokura”)
1015	U.S. Patent Pub. No. 2005/0249949 (“Rowan”)
1016	U.S. Patent No. 3,977,172 (“Kerawalla”)
1017	U.S. Patent No. 4,652,252 (“Westoff”)

1018	Certified Translation of Korean Patent Disclosure No. 10-0245520 (“Baek”)
1019	Korean Patent Disclosure No. 10-2006-0126101 (“Chung”)
1020	Japanese Patent Publication No. 2007-216778 (“Harikae”)
1021	Certified Translation of PCT Publication No. WO 2009/134063 (“Kwon”)
1022	Non-rubberized Cap-Ply Reinforcements, Angela Filipa Saraiva da Rocha, Continental (July 2014)
1023	U.S. Patent Pub. No. 2003/0159768 (“Fritsch”)
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1025	Kolon Industries, Inc., v. Hyosung, Advanced Materials Corp. et al, No. 8:24-cv-00415-JVS-JDE (CDCA) (“Third Amended Complaint”)
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1028	ASTM International. <i>ASTM D885-02: Standard Test Methods for Tire Cords, Tire Cord Fabrics, and Industrial Filament Yarns Made from Man-Made Organic-Base Fibers</i> . ASTM International, 2002.
1029	ASTM International. <i>ASTM D885-03: Standard Test Methods for Tire Cords, Tire Cord Fabrics, and Industrial Filament Yarns Made from Man-Made Organic-Base Fibers</i> . ASTM International, 2003.
1030	ASTM International. <i>ASTM D885-04: Standard Test Methods for Tire Cords, Tire Cord Fabrics, and Industrial Filament Yarns Made from Man-Made Organic-Base Fibers</i> . ASTM International, 2004.

1031	ASTM International. <i>ASTM D885-06: Standard Test Methods for Tire Cords, Tire Cord Fabrics, and Industrial Filament Yarns Made from Man-Made Organic-Base Fibers</i> . ASTM International, 2006.
1032	ASTM International. <i>ASTM D885-07: Standard Test Methods for Tire Cords, Tire Cord Fabrics, and Industrial Filament Yarns Made from Man-Made Organic-Base Fibers</i> . ASTM International, 2007.
1033	<i>Aramid-Nylon 6.6 Hybrid Cords and Investigation of Their Properties</i> , Rubber Chemistry and Technology, Vol., 85, No. 2, pp. 180-194 (2012) (“Yilmaz”)
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1038	02.05.2021 Ltr. from Kolon Industries to Hyosung Advanced Materials
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I. INTRODUCTION

The Director should not deny institution here, as all relevant factors strongly counsel against discretionary denial. Importantly, the District Court has already stayed the parallel proceeding, which never progressed past early fact discovery. The Court's stay pending the IPR proceeding quells any concerns about inefficiencies, duplicative efforts, and conflicting decisions. And, as demonstrated by a recent proceeding that invalidated all claims of the foreign patent to which the '731 Patent claims priority, the merits of the Petition here are especially strong. Indeed, Ground 1 of the Petition (i.e., obviousness over Tamura in view of Baek) is the same ground that led to the invalidation of the '731 Patent's foreign counterpart. Given the substantial similarity between the challenged claims and those now-invalidated claims, Petitioner is highly likely to prevail on at least one challenged claim. Further, the merits arguments in Patent Owner's recently-filed PPOR are exceedingly weak. Patent Owner is effectively banking on the Director's discretion to deny institution here, which would serve only to foster enforcement of an otherwise invalid patent.

Moreover, Patent Owner devotes most of its brief to mischaracterizing the prosecution history to allege substantial similarity between Baldwin and the petition art. But the Petition presents prior art and arguments that differ significantly from anything previously considered by the Office, including Baldwin. In fact, the petition art explicitly teaches the very limitations that overcame the prosecution art.

Finally, settled expectations are not applicable here. Petitioner’s early validity challenge to the foreign counterpart’s analogous claims (and the successful outcome of that proceeding) negates any assertion of settled expectations. Additionally, Patent Owner does not contend that its expectations were settled simply by the ’731 Patent’s age (8 years). Nor could it. As the District Court found, Patent Owner has not shown that Petitioner even participated in the U.S. market with respect to hybrid fiber cords since the ’731 patent has been in force. And critically, the fact that Patent Owner delayed filing suit for *three* years after sending Petitioner a “notification letter” that it now claims settled expectations, underscores the true expectations of both parties—i.e., that there was no infringement.

The record substantiates the parties’ expectations of no infringement: The complaint has been dismissed twice for failure to state a claim. The Patent Owner stipulated to stay discovery pending a ruling on the third motion to dismiss. And the District Court granted Petitioner’s motion to stay pending IPR. It would be manifestly unfair to, on the one hand, apply settled expectations against a petitioner for not challenging the validity of a patent that it does not infringe, and on the other hand, allow a patent owner to sit on its purported patent rights for *three* years after contacting the petitioner. Equity counsels a finding of no settled expectations.

On these facts, the Director should decline to exercise the Director’s discretion to deny institution and allow the validity issues to unfold at the PTAB.

II. FACTUAL BACKGROUND

A. Patent Office Examination

The Patent Office issued one non-final and one final Office Action before allowing the '731 patent in view of the Applicant's after-final amendments. EX1002. Initially, the Office rejected the claims over various applications of Baldwin, Le Clerc, Gillard, and Dehnert. EX1002 (Non-final OA), (Final OA). After the final rejection, the Applicant amended the claims to, *inter alia*, recite “a dry heat shrinkage of 1.5-2.5%” and “a strength retention rate of 80% or more after a disc fatigue test is performed according to JIS-L 1017 method of Japanese Standard Association” in the independent claims. EX1002 (Second Amended Claims). The Applicant argued that Baldwin's 3.6% dry heat shrinkage is outside the claimed range of 1.5%-2.5% and that Baldwin is completely “silent as to a strength retention rate.” EX1002 (After-Final Arguments). The Applicant argued further that Dehnert and Gillard likewise lacked the necessary disclosures. *Id.* at 9-10. The Examiner then allowed the application without providing any reasons for allowance. EX1002 (Notice of Allowance).

Of the four prior art references cited by the Examiner, the Petition relies (optionally) on only one—Baldwin. During prosecution, the Examiner contended that Baldwin disclosed the claimed strength retention rate and dry heat shrinkage because these features were resultant properties of the specific orientation and

materials taught in Baldwin. *See* EX1002 (Non-Final OA), 4; EX1002 (Final OA), 2-3. Much differently, the Petition points to Baldwin, *in the alternative*, simply to show a figure illustrating a nylon and aramid yarn having “identical structures,” as required by the claims. *See, e.g.*, EX1037 (Petition), 32. Indeed, there was no dispute during prosecution that Baldwin discloses these elements. The Petition does not rely on Baldwin, as the Examiner did, to satisfy the claim limitations directed to strength retention rate and dry heat shrinkage. Instead, the Petition argues that primary references Tamura and Chung expressly disclose a dry heat shrinkage within the claimed range and that Tamura and Yokokura (secondary reference), expressly disclose a strength retention rate of 80% or more after a disc fatigue test is performed according to JIS-L 1017. *Id.* (Petition) at 34-37, 75-76.

Although Tamura and Chung were each identified on an IDS, Yokokura and the remaining secondary references—Baek, Harikae, Barnes, Rowan, and Buchanan—have never been considered by the Office in relation to the ’731 patent. As explained below in more detail, these secondary references are not cumulative of any reference relied upon by the Examiner during prosecution (i.e., Baldwin, Le Clerc, Gillard, and Dehnert). *See infra* § IV.A.1

B. Korean Invalidation Proceeding

In February 2021, three years before filing suit in the United States, Patent Owner sent Petitioner a “notification letter,” identifying a laundry list of patents,

including the '731 patent and its Korean counterpart KR 10-1580352 (hereinafter “the Korean counterpart”).¹ EX1038 (02.05.2021 Ltr. from Kolon Industries to Hyosung Advanced Materials). The letter neither accused Petitioner of patent infringement nor identified any particular product. *Id.* Rather, the letter only purported to notify Petitioner that “manufacturing tire cords in ways which infringe upon [Patent Owner’s] patents is strictly prohibited” and that Patent Owner would pursue damages for any “infringement or impending infringement.” *Id.*

Shortly after receiving the letter, Petitioner filed a petition with the Intellectual Property Trial and Appeal Board (“IPTAB”) in April 2022, seeking to invalidate the Korean counterpart. *See* EX1049 (Korean IP High Court Decision) at 1.² In March 2024, the IPTAB erroneously upheld the Korean counterpart. *See id.* Consequently, Petitioner appealed to the Korean High Court, which decisively overturned the IPTAB’s ruling and correctly invalidated the Korean counterpart for multiple reasons, including obviousness over Tamura in view of Baek (i.e., IPR Ground 1, Pet. at 19).

¹ The '731 Patent claims priority from Korean Appl. No. 10-2012-0154933, which is the Korean application that ultimately became Korean Patent No. 10-1580352 (“the Korean counterpart”). *See* EX1001, (30).

² Though Petitioner believed the '731 Patent to be as invalid as its Korean counterpart, Petitioner did not seek IPR of the '731 Patent at that time because Patent Owner’s vague letter neither identified any U.S. product nor gave any indication that the '731 Patent could reasonably be asserted against Petitioner.

The '731 Patent and its Korean counterpart (as amended during the IPTAB proceeding) have comparable claims and are invalid in view of the same prior art.³

'731 Patent	Korean Counterpart ⁴
<p>1. A hybrid fiber cord comprising: a nylon primarily-twisted yarn having a first twist number of 300 to 500 TPM; an aramid primarily-twisted yarn having a second twist number of 300 to 500 TPM; and an adhesive, wherein the first twist number is identical with the second number, wherein the nylon primarily-twisted yarn and the aramid primarily-twisted yarn are secondarily-twisted together at a third twist number which is identical with the first and second twist numbers and have identical structures with each other in the hybrid fiber, wherein the nylon primarily-twisted yarn and aramid primarily-twisted yarn which are secondarily-twisted together with the identical twist number form a 2-ply secondarily-twisted yarn consisting of 1-ply nylon primarily-</p>	<p>1. A hybrid fiber cord comprising a 2-ply twisted yarn consisting of a nylon yarn with a first twist and an aramid yarn having the same second twist as the first twist, and an adhesive coated on the 2-ply twisted yarn.</p> <p>The above hybrid fiber cord is obtained by coating an adhesive on the 2-ply combined yarn formed by the nylon and aramid yarns twisted together with the same twist number as that of the first and second twists.</p> <p>The cut strength and break elongation measured according to ASTM D885 are 11.7 to 15.0 g/d and 7 to 15%, respectively, and the difference between the maximum and minimum values of cut strength and break elongation among 10 samples manufactured under the same conditions is within 1 g/d and 3%, respectively.</p> <p>The dry heat shrinkage rate is 1.5 to 2.5%, and the retention rate after</p>

³ As is relevant for addressing Patent Owner's arguments below (*see infra* § IV), both sets of claims recite the strength retention rate limitation, which is underscored in bold text.

⁴ The claims of the Korean Counterpart have been machine-translated into English. *See* EX100_ (English Translation of Korean Decision); EX100_ (Korean Decision)

<p>twisted yarn and 1-ply aramid primarily-twisted yarn, and</p> <p>wherein the secondarily-twisted yarn is coated with the adhesive, and</p> <p>the secondarily-twisted yarn coated with the adhesive has a strength retention rate of 80% or more after a disc fatigue test is performed according to JIS-L 1017 method of Japanese Standard Association, and has a dry heat shrinkage of 1.5-2.5%.</p>	<p>the disk fatigue test conducted according to the JIS-L 1017 method of the Japanese Standard Association (JSA) is over 80%, which is applied to the cap ply of the tire.</p> <p>The aramid filament has a fineness of 1000 to 1500 denier, and the nylon filament has a fineness of 840 to 1890 denier.</p>
	<p>2. The hybrid fiber cord according to claim 1, characterized in that the first and second twist numbers are 300 to 500 TPM.</p>
<p>2. The hybrid fiber of claim 1, wherein weight ratio of the nylon primarily-twisted yarn to the aramid primarily-twisted yarn is 20:80 to 80:20.</p>	<p>3. According to claim 1, the weight ratio of the nylon warp yarn to the aramid warp yarn is characterized by being between 20:80 to 80:20, which is a hybrid fiber cord.</p>
<p>3. The hybrid fiber of claim 1, wherein the hybrid fiber cord has breaking tenacity of 8.0 to 15.0 g/d and elongation at break of 7 to 15%, the breaking tenacity and elongation at break being measured according to ASTM D885 (2004).</p>	
<p>4. A method for manufacturing a hybrid fiber cord, the method comprising:</p> <p>a first step for primarily-twisting a nylon filament at a first twist number of 300 to 500 TPM to produce a nylon primarily-twisted yarn;</p>	

<p>a second step for primarily-twisting an aramid filament at a second twist number 300 to 500 TPM to produce an aramid primarily-twisted yarn;</p> <p>a third step for secondarily-twisting the nylon and aramid primarily-twisted yarns together at a third twist number to produce a ply yarn in such a way that the nylon and aramid primarily-twisted yarns have identical structures with each other; and</p> <p>coating the ply yarn with an adhesive, and the ply yarn coated with the adhesive has a strength retention rate of 80% or more after a disc fatigue test is performed according to JIS-L 1017 method of Japanese Standard Association, and has a dry heat shrinkage of 1.5 to 2.5%,</p> <p>wherein the first, second, and third twist numbers are identical with each other, and</p> <p>wherein the third step produces a 2-ply secondarily-twisted yarn consisting of 1-ply of nylon primarily-twisted yarn and 1-ply of aramid primarily-twisted yarn.</p>	
<p>5. The method of claim 4, wherein the first, second and third steps are performed simultaneously and continuously.</p>	<p>6. The first step in manufacturing nylon staple fiber is to draw the nylon filament. The second stage of producing aramid filament yarn by drawing aramid filaments; and the third stage of manufacturing a 2-ply composite yarn by simultaneously drawing the nylon filament yarn and the aramid filament</p>

	<p>yarn in the same structure, wherein the same twist count is applied during the drawing of steps 1 and 3, and steps 1 to 3 are performed simultaneously in a continuous manner, characterized in that the method for producing a hybrid fiber cord applied to the cap ply of the tire involves adjusting the tension applied to the nylon filaments and aramid filaments during the spinning processes of steps 1 and 2.</p>
<p>6. The method of claim 4, wherein the step of coating the ply yarn with an adhesive comprises: submerging the yarn having the adhesive solution; drying the ply yarn having the adhesive solution impregnated therein; and heat-treating the dried ply yarn.</p>	<p>8. In the sixth paragraph, the method for manufacturing a hybrid fiber rope, characterized by including the steps of: immersing the above-mentioned binding yarn in an adhesive solution; drying the above-mentioned binding yarn that has been impregnated with the adhesive solution by the immersion process; and further including the step of thermally treating the dried binding yarn.</p>
<p>7. The method of claim 6, wherein the adhesive solution comprises Resorcinol – Formaldehyde - Latex adhesive.</p>	<p>9. In accordance with paragraph 8, the adhesive solution is characterized by comprising a resolphenol-formaldehyde-latex (RFL) adhesive in the manufacturing method of the hybrid fiber cord.</p>

C. U.S. Patent Litigation and Multiple (Granted) Motions to Dismiss

Patent Owner sued Petitioner on February 28, 2024, in the Central District of California, alleging infringement of the '731 patent. EX1039 (Original Complaint, Dkt. 1). Notably, Patent Owner waited *three years* to file its infringement suit after sending its initial letter plainly. This alone objectively indicates that Patent Owner's

expectations were in line with Petitioner’s – that the ‘2021 letter provided no indication that any of Petitioner’s products infringed the ‘731 patent. On May 20, 2024, Petitioner moved to dismiss for failure to state a claim. In response, Patent Owner amended its complaint. On June 17, 2024, Petitioner moved again to dismiss for failure to state a claim. The district court agreed and granted Petitioner’s motion on July 26, 2024. *Id.*; EX1040 (Dkt. 65). According to the Court, Patent Owner’s amended complaint failed to plausibly allege that Petitioner made, sold, offered for sale, or imported into the United States any infringing product. *Id.*, 7-9.

On August 9, 2024, Patent Owner filed a second amended complaint. Petitioner again moved to dismiss for failure to state a claim. The District Court dismissed the second amended complaint on September 27, 2024. EX1050 (Dkt. 82). This time, the Court explained that Patent Owner “offer[ed] only threadbare recitals of the elements of a cause of action, supported by mere conclusory statements that do not suffice.” *Id.* (Dkt. 82) (internal quotation marks and citations omitted).

Patent Owner filed a third amended complaint on October 11, 2024, EX1040 (Dkt. 85), which Petitioner countered with yet another motion to dismiss. Around this time, the parties agreed to stay all discovery pending the Court’s ruling on the motion. Meanwhile, Petitioner sought IPR of all asserted patents and moved to stay the District Court litigation. The Court granted the stay on April 4, 2025. EX1048 (Dkt. 149). Petitioner’s motion to dismiss remains pending.

These series of events further underscore that even at the complaint stage, Petitioner was correct on its expectations that the ‘731 patent was not infringed. Patent Owner’s complaint has now been dismissed twice for failure to state a claim. Rather than face a third dismissal, this petition thus presents a clear case where the parties expect the invalidity of the ‘731 patent to be adjudicated by the PTAB.

III. LEGAL STANDARD

In certain circumstances, the Director may exercise discretion to deny institution of an IPR under 35 U.S.C. §§ 325(d) and 314(a). *Advanced Bionics* provides a two-part framework for evaluating whether denial under § 325(d) is warranted: (1) whether the same or substantially the same prior art or argument previously was presented to the Office; and (2) if the first part is satisfied, whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of the challenged claims. *Advanced Bionics, LLC v. MED-EL Elektromedizinische Gerate GmbH*, IPR2019-01469, Paper 6 (Feb. 13, 2020) (precedential).

The *Becton Dickinson* factors assist in applying this framework: factors (a), (b), and (d) address the first part of the framework, while factors (c), (e), and (f) address the second part. *Ecto World, LLC & Sv3, LLC v. Rai Strategic Holdings, Inc.*, IPR2024-01280, Paper 13 (Stewart May 19, 2025) (precedential); *Becton, Dickinson & Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8 (Dec. 15,

2017) (precedential as to § III.C.5, first paragraph). The presence of new, noncumulative prior art in the Petition may serve as a basis for the Director to decline to exercise discretion under § 325(d). *Oticon Medical AB v. Cochlear Ltd.*, IPR2019-00975, Paper 15 (Oct. 16, 2019) (precedential).

When there is a parallel district court proceeding, the Director considers a non-exhaustive list of six factors when determining whether to exercise discretion to deny institution under § 314(a). *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 at 5–6 (PTAB March 20, 2020) (precedential, designated May 5, 2020). “These factors relate to whether efficiency, fairness, and the merits support the exercise of authority to deny institution in view of an earlier trial date in the parallel proceeding.” *Id.* at 6.

IV. DISCRETIONARY DENIAL IS UNWARRANTED

Petitioner addresses below Patent Owner’s arguments in support of discretionary denial. Each argument lacks merit.

A. Section 325(d) Weighs Against Discretionary Denial

Patent Owner has failed to establish that the Petition should be denied institution pursuant to 35 U.S.C. § 325(d). None of the arguments here are duplicative of those asserted during prosecution, most of the art is unique, and even the one reference that was considered is used for disclosures that were not disputed during prosecution. Indeed, all five grounds rely on one or more of Baek, Barnes,

Rowan, Buchanan, Harikae, or Yokokura—none of which was before the Office during prosecution. Patent Owner argues that these references are cumulative of those actually considered during prosecution. That is false. Each reference offers new teachings that differ from what was already considered by the Office, including the Baldwin disclosure. Finally, with respect to the Petition’s two primary references (i.e., Tamura and Chung), their inclusion on an IDS is inapposite to the § 325(d) inquiry because each reference is combined with “new, noncumulative prior art,” such as Baek or Yokokura. *Oticon Medical AB v. Cochlear Ltd.*, IPR2019-00975, Paper 15 (Oct. 16, 2019) (precedential).

1. The Prior Art Presented in the Petition is Neither the Same Nor Substantially the Same as the Art Previously Considered by the Office

Consistent with the first part of the *Advanced Bionics* framework, *Becton-Dickinson* factors (a), (b), and (d) address whether a Petition presents the same or substantially the same prior art that was previously considered by the Office. *Ecto World*, IPR2024-01280, at 3. Here, these factors weigh against denial.

Regarding Becton factor (a), Patent Owner does not dispute that Yokokura, Baek, Barnes, Rowan, Harikae, and Buchanan were not referenced during prosecution. Nor does Patent Owner dispute that these reference materially differ from the prior art evaluated during examination. Instead, Patent Owner limits its discussion of this factor to Petitioner’s primary references, Tamura and Chung,

which were not discussed in any Office Action but were cited in an IDS. Specifically, Patent Owner argues that under *Ecto World*, the first part of the *Advanced Bionics* framework is satisfied simply because Tamura and Chung were listed on an IDS. See PO’s Request, 10. However, Patent Owner stretches *Ecto World* too far. It does not hold that if any *one* reference in the obviousness combination is listed on an IDS, the first part of the *Advanced Bionics* framework is automatically satisfied even if the remaining references of the combination were not before the Office. Indeed, this interpretation directly contradicts standing precedent like *Oticon Medical*.

In *Oticon Medical*, like here, the grounds raised in the Petition rely on some references that were cited on an IDS (i.e., Westerkull ’794, Westerkull ’222, and Håkansson) and others that were not (i.e., the Choi reference):

Claim(s) Challenged	35 U.S.C. §	Basis
1–12, 14, 16, 25, 28, 33–35, 38, 39, 45, 46	§ 103	Westerkull ’794 and Choi
17	§ 103	Westerkull ’794, Choi, and Håkansson
37, 47	§ 103	Westerkull ’794, Choi, and Westerkull ’222
28, 40, 41	§ 103	Westerkull ’794, Choi, and Brånemark

Oticon Medical at 5. The Board declined to exercise its discretion under § 325(d) because Choi was “new, noncumulative prior art.” *Id.* at 20. Unlike the Petition in this proceeding and in *Oticon Medical*, the Petition in *Ecto World* relied “*exclusively* on prior art references that were submitted to the Office in an information disclosure

statement.” *Ecto World* at 2. Thus, the Director held that because *every* reference the Petition asserted was provided on the IDS, the first part of the *Advanced Bionics* framework was satisfied. *Id.* at 4 (emphasis added).⁵ In situations where the Petition asserts *only* previously-considered prior art, like in *Ecto World*, it makes sense that *Becton* factors (a), (b), and (d) suggest that the Office previously considered the same or substantially the same prior art.

But here, the Petition relies on Tamura and Chung in view of one or more never-before-considered references, including Baek, Barnes, Rowan, Buchanan, Harikae, or Yokokura. The Patent Owner cannot succeed on the first *Becton* factor without addressing the similarities and differences between the prior art asserted in the Petition and the prior art previously considered by the Office.⁶

On Becton factor (b), Patent Owner’s sole argument is that Tamura and Yokokura are cumulative of Baldwin, which was applied in several Office Actions during the examination stage. *See* PO’s Request at 9, 16, 19. According to Patent

⁵ The Director relied on *Google LLC v. Valtrus Innovations Ltd.*, IPR2022-01197, Paper 18, 15 (PTAB June 13, 2023) to support her *Ecto World* decision. *Ecto World* at 4. There too, *every* prior art reference in the Petition’s asserted obviousness combinations was also considered during prosecution. *Google* at 13-15.

⁶ In a footnote, Patent Owner vaguely argues that it should receive a second discretionary denial brief if this Opposition argues material error. *See* PO’s Request at 11 n. 3. Though it is not entirely clear what material-error arguments Patent Owner is anticipating, nothing in this Opposition constitutes good cause or entitles Patent Owner to a second bite at the apple.

Owner, the three references are cumulative of one another because none of them discloses the claimed “strength retention rate ... after a disc fatigue test is performed according to JIS-L1017 method of Japanese Standard Association.” *See, e.g.*, PO’s Request at 12. Patent Owner is wrong.

As an initial matter, the Director should decline to resolve Patent Owner’s merits-based arguments about what the asserted reference teach (or do not teach) at this stage. *See, e.g.*, FAQs for Interim Processes for PTAB Workload Management, <https://www.uspto.gov/patents/ptab/faqs/interim-processes-workload-management> (“The parties should not treat a discretionary denial brief or opposition as an additional opportunity for merits briefing.”). Patent Owner may disagree with Petitioner’s reasonable argument and explanation (supported by Dr. Rust’s Declaration) that Tamura and Yokokura expressly teach and/or render obvious the strength retention limitation of claims 1 and 4. *See, e.g.*, Petition; Ex-1003. But that disagreement is for the merits panel to address. *See* Interim Processes for PTAB Workload Management Memorandum, March 26, 2025 (Stewart), at 1 (“decisions on whether to institute an IPR or PGR will be bifurcated between (i) discretionary considerations and (ii) merits and other non-discretionary statutory consideration”).

Further, Patent Owner’s argument that Tamura and Yokokura are cumulative of Baldwin because each reference lacks the claimed strength retention rate finds no basis in fact or law. As discussed above (as well as in the Petition and Dr. Rust’s

declaration), Tamura and Yokokura in fact disclose the strength retention rate limitation. *See, e.g.*, Petition; EX1003. But even if they did not, the absence of teaching would not render the references cumulative of Baldwin. References are cumulative if they provide largely co-extensive disclosures, *see e.g.*, *Becton Dickinson* at 22, not because they mutually lack a particular teaching. Thus, Patent Owner improperly flips the meaning of “cumulative” on its head.

Finally, although Tamura, Yokokura, and Baldwin are doubtless analogous art, they are not co-extensive. Baldwin concerns an aramid-nylon hybrid reinforcement cable but does not disclose certain claimed features, including the limitation requiring the aramid and nylon yards to have the same twist number. *See, e.g.*, EX1007 at [0062] (disclosing that each aramid yarn is twisted “most preferably to about 10.7 tpi”); [0063] (disclosing that each nylon yarn is twisted “most preferably to about 6.2 tpi”); [0063] (“The nylon and aramid yarns are then plied together to form a cable with an S twist in the range of about 3 to about 16 tpi, more particularly in the range of about 7 to about 10, and most preferably about 9.7 twists/inch.”). Patent Owner does not dispute that Tamura teaches nylon and aramid yarns having the same twist number. Also, Patent Owner concedes that both Tamura and Yokokura expressly disclose the JIS-L 1017 tests and Baldwin does not. *See, e.g.*, PO’s Request at 13 (acknowledging that Tamura states [i]n accordance with JIS

L 1017, tests were carried out on one fiber cord....”), *id.* at 17 (acknowledging that Yokokura discloses that “the strength is measured according to JIS-L 1017”).

As to Becton factor (d), Patent Owner does not even attempt to dispute that the Petition presents new invalidity arguments that were not raised during prosecution. Nor could it. The Petition asserts that the prior art (*e.g.*, Tamura, Chung, Baek, Barnes, Rowan, Buchanan, Harikae, or Yokokura) expressly discloses, either alone or in combination, every claim limitation. The Examiner did not advance this argument. In stark contrast to the Petition, the Examiner instead posited that the breaking tenacity, elongation at break, strength retention, and dry heat shrinkage limitations were merely “resultant properties of the specific materials in a specific orientation, all of which Baldwin teaches.” EX1002 (09.29.2016 Non-Final OA) at 4; *id.* (05.03.2017 Final OA) at 2-3; *see supra* § II.A.⁷

For the foregoing reasons, the first part of the *Advanced Bionics* framework counsels against discretionary denial.

⁷ Patent Owner insinuates that the Petitioner relies on Dr. Rust’s Declaration to fill gaps in the prior art. *See* PO’s Request at 18. It does not. Dr. Rust’s Declaration is offered to provide helpful context about the state of the art (including the various tests employed in the industry, such as JIS-L 1017), background knowledge of a POSITA, and various terms of art (*e.g.*, fiber, yarn, cord, ply, etc.).

2. The Office Materially Erred in Overlooking Tamura and Chung

The second part of the *Advanced Bionics* framework likewise disfavors denial. An analysis of *Becton-Dickinson* factors (c), (e), and (f) clearly demonstrates that the Office materially erred in overlooking Tamura, which is perhaps why Patent Owner gives these factors only cursory treatment in its brief. Patent Owner's argument essentially boils down to grumbling that the Director should deny institution because the Petition did not sufficiently show PTO error. This position is untenable. The entire Petition is dedicated to demonstrating how the Office erred in issuing the '731 Patent. Moreover, as it pertains to discretionary denial, the Director has explicitly instructed parties that "[t]he petition should not address discretionary issues" and that "[a] petitioner should raise any discretionary issues in its opposition to a patent owner's discretionary denial brief, including issues relating to 35 U.S.C. § 325(d)." *See* FAQs for Interim Process for PTAB Workload Management (FAQ #24).

Although Patent Owner's Request fails to substantively address *Becton Dickinson* factors (c), (e), and (f), Petitioner does so here for completeness but notes that Patent Owner's failure does not constitute good cause for leave to file a reply as Patent Owner appears to suggest in footnote 3. *See* PO's Request at 11 n. 3.

Regarding *Becton factor (c)*, the parties agree that Tamura, Chung, and Baldwin are the only references asserted in the Petition and also included in the

prosecution history. *See generally* PO's Request. While Baldwin served as the basis for a rejection during examination, the Petition offers Baldwin only as an *alternative* secondary reference. Petition at 19. Specifically, the Petition argues that Tamura alone discloses the "identical structures" limitation but points alternatively to the figures of Baldwin or Baek for their visual disclosure of "identical structures." *Id.* at 31-32. Patent Owner's Request does not contend that the Petitioner (or the Examiner) erred in arguing that Baldwin discloses the "identical structures" limitation.

The Petition's two primary references, Tamura and Chung, were (i) only listed on an IDS and were not a basis for rejection during examination, (ii) substantially differ from the prior art applied in the Examiner's Office Actions (e.g., Baldwin), and (iii) includes specific teachings that impact the patentability of the challenged claims. *See Ecto World* at 5 ("a petitioner may argue that it satisfies the second part of *Advanced Bionics* because the asserted prior art was not a basis for rejection during examination, is not substantially the same as prior art the Examiner applied, and includes specific teachings that impact patentability of the challenged claims"). As explained in the Petition (and herein with respect to the first part of the *Advanced Bionics* framework), Tamura and Chung explicitly disclose claimed properties (e.g., breaking tenacity, elongation at break, strength retention, and dry heat shrinkage) that the prosecution art at most provides only implied or inherent disclosure, falling

short of the express teachings found in Tamura and Chung. *See* EX1002 (Non-Final OA) at 4; *id.* (Final OA) at 2-3; *see supra* § II.A. The Examiner materially erred by overlooking these express teachings in Tamura and Chung.

As to Becton factor (e), Petitioner's detailed analysis of the Examiner's oversight is provided in this opposition, consistent with the Director's guidance. *See* FAQs for Interim Process for PTAB Workload Management (FAQ #24). However, the Petition sufficiently demonstrates that, in light of the direct and explicit teachings in the asserted prior art, the Examiner materially erred in allowing the '731 Patent. *See, e.g.*, Petition at 20-83 (§§ VIII-XII). Additionally, the Petition articulates the following arguments, which sufficiently identify errors in the Examiner's evaluation of Tamura, Chung, and Baldwin:

Although Tamura and Chung were cited in Patent Owner's information disclosure statements, and Baldwin was relied on during prosecution, the examiner did not have the benefit of considering these references in view of the combination references identified in this Petition, including Barnes, Buchanan, Hariake, Yokokura, and Rowan.

Petition at 87.

Further, the examiner withdrew his Baldwin-based rejection only after Patent Owner argued that 'Baldwin fails to teach or suggest a secondarily-twisted yarn coated with adhesive that has a strength retention rate of 80% or more after a disc fatigue test is performed according to JIS-L 1017 method of Japanese Standard Association, and has a dry heat shrinkage of 1.5 to 2.5%' and added this language to the independent claims. EX1002 (Reply to Office Action (Aug. 3, 2017), 30-31. As explained above in Sections VIII.D and IX.D, Tamura, Chung, and/or Yokokura clearly teach these limitations and thus

overcome any purported deficiencies the examiner may have identified in connection with Baldwin.

Id. at 87-88.

At minimum, a material error existed in the prosecution leading to the issuance of the '731 Patent because Baek, Yokokura, Barnes, Buchanan, Harikae, and Rowan were not considered alone or in combination with Tamura and Chung. *See Oticon Medical* at 19. But the Examiner further erred by failing to fully recognize the strength of Tamura itself. As the Petition demonstrates, Tamura nearly anticipates the independent claims and is combined with Baek or Baldwin, only to the extent that Patent Owner argued Tamura lacked the “independent structures” limitation. *See* Petition at 25-37 (§§ VIII.D.1, VIII.D.3).

The Examiner’s oversight with respect to Tamura and Chung may stem from the fact that these references were published in foreign languages (i.e., Tamura is a Japanese reference and Chung is a Korean refernce), and the Applicant did not supply the Examiner with English translations. While the Examiner could have sought translations from various sources, *see* MPEP 901.05(d), the fact that Tamura and Chung also lack figures (e.g., a drawing of a tire cord like Baldwin provides) may have further obfuscated their relevance. Consequently, the Examiner may have

opted not to delay prosecution while seeking translations for references of unknown relevance.⁸

Finally, on Becton factor (f), invalidation of the Korean counterpart constitutes additional evidence and facts warranting reconsideration of the prior art and arguments. *Ecto World* at 6. As explained above, the Korean High Court canceled all claims of the Korean counterpart for being obvious over the combination of Tamura and Baek, which is Ground 1 in this Petition. *See supra* § II.B. Because the now-invalid claims of the Korean counterpart were substantially similar to the challenged claims of the '731 Patent, the validity of the '731 Patent should be reconsidered in view of the new art and arguments presented in the Petition. *See supra* § II.B.

B. The *Fintiv* Factors Militate Against Discretionary Denial

This is the quintessential case for institution. None of the *Fintiv* factors favor discretionary denial. *Fintiv*, IPR2020-00019, at 5-6. Indeed, every factor either weighs strongly against denial or remains neutral. As detailed below, the District

⁸ Patent Owner points to Tamura's use of the term "large-diameter rubber hose" instead of "tire" in an attempt to distinguish Tamura from the '731 Patent. PO's Request at 15. However, Patent Owner is quoting an English translation of a Japanese reference, which may not use the exact terminology used in native English publications. In addition, Patent Owner fails to explain the difference between a tire and a large-diameter rubber hose besides perhaps a different intended use. More still, Patent Owner ignores the fact that the term "tire" is not recited in any challenged claim. The claims cover the apparatus and method of manufacturing "a hybrid fiber cord." *See* EX1001 ('731 Patent), claims 1-7.

Court stayed the litigation in its early stages, *pending resolution of the IPR* —before any depositions, before any claim construction briefing, and well before the close of fact discovery. Even more compelling, Patent owner *stipulated* to stay discovery, after its complaint was dismissed *twice* for failure to state a claim. The litigation stalled because Patent Owner’s facially-deficient complaints were dismissed twice and amended thrice. Then, in October 2024, the parties *jointly* agreed to stay all discovery pending resolution of Petitioner’s motion to dismiss Patent Owner’s still-facially-deficient third amended complaint. That motion is still pending.

With no trial date in sight and much work lying ahead (e.g., fact and expert discovery, the *Markman* process, dispositive motions, etc.), the Board as a practical matter would resolve the parties’ validity dispute long before the District Court could. But even if the district court trial theoretically would occur before the statutory deadline for a final written decision, the District Court has already given the PTAB the right-of-way.

1. Factor 1: The Parallel Proceeding is Stayed

The district court’s stay pending resolution of the PTAB trial weighs strongly against exercising discretion to deny institution. *See Fintiv* at 6; *Snap* at 9. Patent Owner has not argued otherwise.

2. Factor 2: The Board’s Final Written Decision Would Issue Before Trial

Patent Owner speculates that if the Director denies institution, trial in the district court would ensue before a final written decision would be due in October 2026. PO’s Request at 24.⁹ This, however, speculative at best and simply ignores reality. As the District Court explained in its Order granting Petitioner’s motion to stay, the district court litigation “is in its early stages” and “there is more work ahead of the parties and the Court than behind.” *See* Dkt. 149 at 2-3. Not only has fact discovery scarcely begun, but Petitioner has not answered a complaint because they have all been facially-deficient. Further, no depositions have been scheduled (much less taken), claim construction briefs have yet to be exchanged, and expert discovery is many months away.

All told, Patent Owner’s district court case would not realistically be trial-ready before October 2026, particularly because Patent Owner still has not filed a complaint stating a claim for which relief can be granted. Moreover, based on Judge Selna’s time-to-trial statistics over the past 10 years, trial would not occur for several more years, as his median time-to-trial is 39 months. EX1047 (Docket Navigator, Judge Selna’s time-to-trial statistics); EX1048 (disclosing Central District of

⁹ Patent Owner presumes that the final written decision would issue in October 2026 if the IPR were instituted in October 2025. PO’s Request at 24.

California time-to-trial is 28.6 months. Thus, Fintiv factor 2 counsels against discretionary denial.

3. Factor 3: Little Investment Has Been Made in the Now-Stayed Parallel Proceeding

By statute, a party has up to one year after the date on which it was served with a complaint alleging infringement to file a petition for *inter partes* review. *See* 35 U.S.C. §315(b); *Oticon* at 22; *NHK* at 18 (“Petitioner filed the Petition shortly before the one-year bar in 35 U.S.C. § 315(b) expired ... [t]he Petition, therefore, was timely, and Patent Owner does not apprise us of any tactical advantage, or opportunity for tactical advantage, that Petitioner gained by waiting to file the Petition.”). Patent Owner concedes that Petitioner did not run afoul of the statutory time bar but nevertheless faults Petitioner for not filing earlier. PO’s Request at 25-29. And instead of describing any specific tactical advantage to Petitioner from the timing, Patent Owner merely postulates that “[i]t is hard to fathom why Petitioner would wait until the one-year deadline except to try to obtain a tactical advantage.” PO’s Request at 17. Not surprisingly, Patent Owner cannot identify any tactical advantage where none exists.

Far from engaging in gamesmanship, Petitioner’s hesitation stemmed from considerations of efficiency and uncertainty. To date, none of Patent Owner’s complaints have stated a claim upon which relief could be granted. Accordingly, Petitioner had hoped to avoid burdening the Board with an *inter partes* review when

there was little chance that Patent Owner’s claims would survive. However, when it became apparent that Patent Owner intended to continue filing deficient complaints until receiving a dismissal *with prejudice*, Petitioner began diligently searching for prior art and preparing its Petition. Further, as the Patent Office has recognized, “it is often reasonable for a petitioner to wait to file its petition until it learns which claims are being asserted against it in the parallel proceeding.” *Fintiv* at 11. Petitioner filed its Petition just 5 months after receiving Patent Owner’s infringement contentions in September 2024, and 2 months after filing its Invalidity Contentions in December 2024.

In addition to being timely, the Petition was filed before the parties and the Court made any substantial investments in the district court litigation. Even Patent Owner seems to acknowledge that the parties invested mostly in “three rounds of motion to dismiss at the District Court.” *See* PO’s Request at 28. These were costs imposed by Patent Owner’s own failings.

Moreover, Patent Owner’s claim of substantial investment is unmoored from reality. Patent Owner has produced a paltry 125 documents, Defendants have collectively produced 368 documents, no depositions have taken place, claim construction briefs have not been exchanged, the *Markman* process has not begun, and expert discovery is a long way off. The Board has consistently found similar situations to weigh against denial. *See, e.g., Mercedes-Benz Group AG v. The Phelan*

Group, LLC, IPR2025-00413, Paper 13 (finding that “[t]he parties have invested relatively little resources” where contentions were served but claim construction briefing had not yet begun); *Toyota Motor Corp. v. Emerging Automotive LLC*, IPR2024-00786, Paper 11 at 47 (factor 3 weighs against denial where contentions served but claim construction briefs not yet filed).

Fintiv factor 3 disfavors discretionary denial.

4. Factor 4: The Petition and Invalidation Contentions Do Not Substantially Overlap

At the outset, Petitioner notes that the District Court’s stay moots any concerns over inefficiencies, duplicative efforts, or conflicting decisions. *See Fintiv* at 12. Currently, the parties’ validity dispute falls exclusively within the PTAB’s purview. And IPR estoppel would prevent the Petitioner from challenging validity on any grounds that were raised or reasonably could have been raised during the IPR. *See* 35 U.S.C. § 315(e). Thus, any overlap between the Petition and the Invalidation Contentions is inapposite.¹⁰

But even if there were no stay, *Fintiv* factor 4 would still support institution because the Petition asserts art (e.g., Buchanan) that materially differs from that which is asserted in the Invalidation Contentions, and the Invalidation Contention asserts

¹⁰ Patent Owner notes that Petitioner has not entered a stipulation to “mitigate the overlap.” PO’s Request at 30-31. As explained above, there is no overlap. Nor is there any outstanding issue requiring a stipulation in light of the District Court’s stay pending IPR.

art (e.g., Fritsch, Nakayasu, Choi, Love, Allma, etc.) that materially differs from that which is asserted in the Petition. *Fintiv* at 12-13 (“if the petition includes materially different grounds, arguments, and/or evidence than those presented in the district court, this fact has tended to weigh against exercising discretion to deny institution”); *Snap* at 15.

Patent Owner avers that IPR would not serve as a true alternative to the district court validity challenge because Petitioner’s Invalidation Contentions allege indefiniteness, which the PTAB cannot address. *See* PO’s Request at 23, 38-39. This argument is perplexing. From the inception of IPRs, it has always been the case that the District Court must resolve issues outside of the PTAB’s ambit (e.g., validity challenges based on § 101, § 112, and §§ 102, 103 (prior art systems)). Yet, as best Petitioner can divine, Patent Owner appears to suggest that IPR is inappropriate when these validity issues are in play. That position stands in stark contrast to over a decade of IPR precedent. More still, Patent Owner fails to account for the fact that the District Court would not need to resolve indefiniteness challenges as to claims the Patent Office invalidates. And as for any claims the PTAB upholds, IPR estoppel protects against inefficiencies, duplicative efforts, and inconsistent decisions.

The cases on which Patent Owner relies are inapposite. PO’s Request at 38-39. In *Arthrex, Inc. v. MedShape, Inc.*, the petition purported “to rely on a construction of an allegedly indefinite claim term” and reflected the petitioner’s

“best guess” as to what the patent owner might have been arguing in the parallel proceeding. IPR2025-00053, Paper 11 at 14-15 (PTAB Apr. 25, 2025). Unlike in *Arthrex*, the Petition here does not rely on any proposed claim constructions for indefinite terms. Patent Owner also offers *Nokia of Am. Corp. v. Pegasus Wireless Innovation, LLC* for the unremarkable proposition that adjudicating § 112 disputes is the District Court’s prerogative. IPR2025-00037, Paper 14 at 13 (PTAB Apr. 25, 2025). But, just as the *Nokia* Board concluded, here too, *Fintiv* factor 4 militates *against* discretionary denial, even despite the outstanding § 112 issues. *Id.* at 13.

5. Factor 5: That Petitioner and Defendant are the Same Entity is Neutral

Fintiv factor 5 is neutral given the stay and lack of substantial overlap between the Petition and the Invalidity Contentions. *See, e.g., Snap* at 16; *supra* § IV.B.4 (Factor 4 – Overlap Between the Issues Raised). The stay and minimal overlap in asserted prior art eliminate concerns over inefficiencies, duplicative efforts, and inconsistent decisions. Accordingly, the fact that Petitioner and Defendant are the same entity is irrelevant to the § 314 analysis here.

6. Factor 6: The Merits of the Petition Compel Institution

Patent Owner’s mischaracterization of the merits as weak is belied by the content of its brief, which identifies only two purported sources of weakness. First, Patent Owner argues (with respect to § 325(d)) that neither Tamura nor Yokokura disclose the claimed “strength retention rate of 80% or more after a disc fatigue test

is performed according to JIS-L 1017 method of Japanese Standard Association.” PO’s Request at 12-18. Second, Patent Owner argues that the Petition and Expert Declaration are too similar. *Id.* at 32-38. Both flawed arguments are discussed in turn below.

Regarding the “strength retention rate” limitation, Patent Owner’s descriptions of Tamura and Yokokura amount to hair-splitting and bare attorney argument. Not once does Patent Owner consider what the disclosures of Tamura and Yokokura *would have conveyed to a POSITA*. However, the Petition (as supported by Dr. Rust’s Declaration) thoroughly explains how and why a POSITA would have understood Tamura’s disclosed strength retention rates of 88% and 90% and Tamura’s teaching that “[i]n accordance with JIS L 1017, tests were carried out on one fiber ... and the force ... [was] measured” to satisfy the disputed claim limitation. *See* Petition at 34-37. The Petition and Dr. Rust’s Declaration also explain that a POSITA would have understood Yokokura’s disclosure of evaluating the tire “for strength in accordance with JIS L 1017,” converting the measurement strength into the retention ratio in %, and strength retention ratios of 84%, 85%, 89%, and 98% to likewise meet the disputed claim limitation. *See, e.g., id.* at 75-76.

Patent Owner’s arguments concerning Dr. Rust’s Declaration fare even worse. Patent Owner criticizes Dr. Rust for purportedly regurgitating attorney argument when, in fact, it is Dr. Rust’s sharp focus on the key issues in the Petition that creates

the similarities. *See* FAQ No. 21 (“It is most helpful if an expert is providing focused testimony ...”). Dr. Rust was deeply involved in ensuring that the arguments in the Petition and the Declaration were technically accurate and reliable. Dr. Rust’s Declaration reflects his own knowledge and expertise. And while Dr. Rust was informed of certain legal concepts (as exemplified by the one-off legal citation in his declaration), he is not a lawyer and does not offer any legal opinions or conclusions. Rather, Dr. Rust’s Declaration focuses on areas of the Petition where expert testimony is most helpful, including the background technology, what the prior art references teach a POSITA, the rationale for combining references, the meaning of terms of art, the state of the art, etc.

In addition, the Petition’s extensive citation to and overlap with Dr. Rust’s supporting Declaration comports with the PTAB’s rules forbidding Petitioners from incorporating by reference other papers into their briefs. 37 C.F.R. § 42.6(a)(3); *Cisco Systems, Inc. v. C-Cation Techs., LLC*, IPR2014-00454, Paper 12 (Aug. 29, 2014) (informative). Because expert arguments that are in the declaration but missing from the Petition will likely not be considered by the Board, Petitioners are generally well-served by extensively quoting and citing their expert’s testimony and documentary support. That is precisely what Petitioner has done.¹¹

¹¹ Notably, the Petition was filed *before* the Director’s Memorandum indicating that extensive reliance on expert testimony may be a factor for

In any event, overlap between the Petition and the Expert Declaration is not a problem. As the Board made clear in *Xerox*, it is an expert’s repetition of **conclusory** arguments that is entitled little weight. *Xerox Corp. v. Bytemark, Inc.*, IPR2022-00624, Paper 9 at 15 (Aug. 24, 2022) (precedential) (“Thus, the cited declaration testimony is **conclusory and unsupported**, adds little to the conclusory assertion for which it is offered to support, and is entitled to little weight.” (emphasis added)). Here, Dr. Rust did not make conclusory arguments—he provided detailed explanations for his opinions. *See, e.g., PLR Worldwide Sales* at 41 (“[W]e find that the assertions in the Petition are supported by the teachings of Hays and thus are not conclusory, thus distinguishing this situation from the one described in *Xerox*.”).

Finally, Patent Owner argues that the Petition should be denied because it relies on Dr. Rust’s testimony to “supplement teachings missing from the references themselves.” PO’s Request at 37. Though it is unclear what “missing teachings” Patent Owner refers to (as there are none), Dr. Rust’s testimony appropriately explains how a POSITA would have understood the prior art and what a POSITA would have deemed obvious in light thereof. Longstanding Supreme Court precedent holds that an obviousness inquiry need not rely solely on the express teachings in the prior art but can instead rely on the knowledge of an ordinary artisan.

discretionary denial was issued. Retroactively applying that factor would be unfair to Petitioner, if not a violation of its due process rights.

KSR Intern. Co. v. Teleflex Inc., 550 U.S. 398, 418 (2007). Whether Dr. Rust’s testimony satisfies *KSR*’s flexible approach is more appropriately determined at the merits stage, especially since Patent Owner has not disputed the motivations to combine discussed in the Petition and Dr. Rust’s Declaration.¹²

C. The Remaining Considerations Disfavor Discretionary Denial

The Director has indicated her willingness to consider “all relevant considerations” bearing on her decision. Here, additional considerations such as invalidation of the Korean counterpart, the lack of settled expectations, the reasonable number of unpatentability grounds, and the strong merits each urges institution.

1. The Petition’s Merits are Strong

As discussed above, the Korean patent to which the ’731 Patent claims priority was recently invalidated in view of grounds that are also asserted in this Petition. *Supra* § II.B. Because the claims of the ’731 Patent substantially track the now-invalid claims, there is a high likelihood that Petitioner would succeed on the merits. Patent Owner’s recently-filed PPOR mostly doubles down on the failed arguments in its Request for Discretionary Denial. Patent Owner continues to press the argument that Tamura, Chung, and Yokokura do not teach the “strength retention

¹² Patent Owner’s arguments concerning the indefiniteness arguments advanced in the Invalidity Contentions (but not in the Petition) are addressed above with respect to *Fintiv* factor 4. *See supra* § IV.B.4.

rate” limitation. In general, Patent Owner focuses on the test performed on the cord before measuring the strength retention rate (ignoring the fact that the many of the claims are apparatus claims, *not method* claims).

With respect to Tamura, Patent Owner attempts to distinguish “strength retention rate *after buckling*” in accordance to JIS-L 1017 from “strength retention rate *after a disc fatigue test*” in accordance to JIS-L 1017. *See* PPOR, 16-24. Patent Owner omits any reason why a POSITA would have interpreted the two terms differently, especially given that Tamura is a Japanese-to-English translation. Patent Owner attempts to backfill the specification with newfound details about disc fatigue tests, but the specification is clear: in the disc fatigue test, “fatigue was applied to the sample by means of the disc fatigue tester which repeated the stretching and contracting steps for 8 hours at 80° C while rotating the sample at 2500 rpm.” EX10001, 9:50-57; PPOR at 16-24. As “buckling” relates to bending and giving way under a weight or force, a POSITA would not have ascertained any material difference between “after buckling” and “after a disc fatigue test.”

Patent Owner takes a similar approach regarding Chung in view of Yokokura. Specifically, Patent Owner argues that Yokokura’s “driving test on a drum” is different from a “disc fatigue test.” PPOR, 42-45. Patent Owner’s arguments suffer from the same deficiencies that are discussed above with respect to Tamura.

For these reasons and others set forth in Section IV.C.6 (*Fintiv* factor 6) above, the merits of the Petition are exceedingly strong, and Patent Owner's rebuttal is unpersuasive. *See id.*; *supra* § IV.C. 6.

2. The Parties Lacked Settled Expectations

Patent Owner insists that its expectations were settled by Petitioner's decision not to challenge the validity of the '731 Patent in 2022 when it challenged the validity of the Korean counterpart. PO's Request at 41. But Patent Owner's narrative defies logic. The claims of both patents cover common ground, so if anything, Petitioner's Korean challenge should have clued Patent Owner into Petitioner's view of the '731 Patent. At any rate, whatever settled expectations Patent Owner claims it once had were uprooted by invalidation of the Korean counterpart.

Petitioner's actions reveal its settled expectations. Upon receiving Patent Owner's so-called "notification letter" listing a bevy of patents and no accused U.S. products, Petitioner immediately challenged the validity of the Korean counterpart because it expected the patent to be invalidated. However, Petitioner refrained from launching a preemptive strike against the '731 Patent because it had no expectation of being sued for patent infringement in the United States since it had yet to enter that market. *See supra* § II.B. Over the next *three years of radio silence* regarding the '731 patent, Petitioner's belief that Patent Owner would not attempt to enforce the patent against Petitioner solidified. And when Patent Owner ultimately filed suit

in February 2024, Petitioner immediately sought to dismiss Patent Owner's baseless claims. The two dismissals (a third pending) and Patent Owner's agreement to stay fact discovery confirms Petitioner's expectations. Though Petitioner had expected to resolve the parties' dispute without burdening the Board, Patent Owner repeatedly filed facially-deficient complaints even as the time bar approached. Petitioner could wait no longer.

To the extent that Patent Owner contends that the parties' expectations were settled by Patent Owner's February 2021 notification letter, Patent Owner is wrong. As explained above, when Petitioner received the letter, it was a foreign company operating primarily in Korea and thus no expectation that the '731 patent would be enforceable. Even Patent Owner concedes that Petitioner had no U.S. presence or product. EX1041[Third Amended Complaint]; *Intel Corp. v. Proxense LLC*, IPR2025-00327, Paper 12 at 3. Besides, even if the 2021 letter could be treated as the date upon which expectations began (which it should not), 4 years is not nearly enough time for expectations to settle. *Cambridge Industries USA, Inc. v. Applied Optoelectronics, Inc.*, IPR2025-00434, Paper 11 at 2-3 (finding that 6 years was insufficient time for expectations to settle).

Finally, Patent Owner forfeited any argument that the age of '731 Patent settled its expectations. Despite the fact that the Director's first application of settled expectations issued on June 6, 2025, *iRhythm, Inc. v. Welch Allyn, Inc.*, IPR2025-

00363, -00374, -00376-78, Paper 10 at 3 (PTAB June 6, 2025), Patent Owner did not even mention the age of the '731 Patent or how long it had been in force. And Patent Owner was familiar with *iRythm* because cited the Decision in its Request when arguing that its expectations were settled by Petitioner filing its IPR petition in 2025 though it knew about the '731 Patent since 2021.

But even if Patent Owner had not forfeited this argument (which it has), it still should fail. Eight (8) years is still relatively recent, especially because the tire cord industry is less competitive and expectations thus take longer to become established as compared to other fields. Indeed, prior to the litigation brought by Patent Owner, neither Petitioner nor Patent Owner had ever been a party to a patent infringement lawsuit or an IPR proceeding. And the other players in the tire cord technology space, including Shenma, Kordsa, Toray, Teijin, and Indorama Ventures, have likewise never appeared before the PTAB. Exs. ___. Needless to say, it is uncommon in the tire cord industry to challenge patents—invalid or not. Thus, the industry is simply not one in which expectations are easily settled by patent enforcement.

3. Compelling Economic Interests Weigh Against Denial

Patent Owner's purely private economic interests do not warrant discretionary denial. PO Request at 42. According to Patent Owner, institution would "unnecessarily delay Patent Owner in enforcing its intellectual property rights and allow Petitioner to continue to attempt to take business away from Patent Owner and

plague the U.S. market with infringing products.” *Id.* But Patent Owner omits critical facts. First, Patent Owner has yet to plausibly allege that Petitioner infringes the ’731 Patent, or even participates in the U.S. market. Second, Patent Owner neglected to seek a preliminary injunction, which would have addressed its concern about lost profits. Third, in October 2024, Patent Owner *agreed* to stay fact discovery pending a ruling on Petitioner’s fourth motion to dismiss. And fourth, Patent Owner’s failure to assert a plausible claim against Petitioner has been the main source of delay in Patent Owner’s enforcement attempt.

In contrast to Patent Owner’s private economic woes, there are compelling *public* interests that favor institution. For example, allowing patent owners to extract licensing fees from petitioners on invalid patents would be a significant, unjustified cost to petitioners and their customers who would likely bear the brunt of the burden.

4. The Petition Raises A Reasonable Number of Grounds for the Board to Consider

Patent Owner bemoans having to respond to 14 unpatentability grounds, spread over 7 claims. PO’s Request at 43. But Patent Owner largely overstates its burden. Only 3 grounds are asserted against the independent claims: (1) Tamura in view of Baldwin, (2) Tamura in view of Baek, and (3) Chung in view of Harikae and Yokokura. And responding to the first two would not require much additional effort, as Baldwin and Baek offer the same minor teaching (i.e., a drawing illustrating nylon and aramid yarns having “identical structures”). The dependent claims include

additional limitations, so additional prior art references are applied. But Patent Owner double counts several grounds. For example, Patent Owner unreasonably argues that Tamura in view of Baldwin, Rowan, and Buchanan is materially different from Tamura in view of Baldwin and Rowan. PO's Request at 43. It is not. Addressing the former necessarily addresses the latter. Moreover, if the parties were to litigate validity in District Court as opposed to the PTAB, Patent Owner would have many more grounds to respond to.

Finally, Patent Owner's reliance on *Arashi Vision* is missing the mark. *Id.*; *Arashi Vision (U.S.) LLC v. GoPro, Inc.*, IPR2024-01434, Paper 9 at 10-11 (Mar. 31, 2025). In *Arashi*, the Petition offered only vague analyses for 24 distinct grounds asserted against a single independent claim. *Arashi* at 11 ("An *inter partes* review based on 24 distinct grounds raised against a single claim, supported by analysis lacking in particularity, potentially burdens Patent Owner unduly and makes inefficient use of the Board's resources."). Here, however, the Petition asserts no more than 6 grounds against any single claim, even accepting Patent Owner's miscount.

V. CONCLUSION

For the foregoing reasons, the Director should decline to exercise discretion to deny IPR and should submit the Petition to the panel for review on the merits.

Date: July 16, 2025

Respectfully submitted,

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**CERTIFICATE OF COMPLIANCE WITH
TYPE-VOLUME LIMITATION, TYPEFACE REQUIREMENTS,
AND TYPE STYLE REQUIREMENTS**

1. This paper complies with the type-volume limitation of 14,000 words, comprising 10,174 words, as counted using the Microsoft Word software that was used to prepare this paper, excluding the parts exempted by 37 C.F.R. § 42.24(a).

2. This Petition complies with the general format requirements of 37 C.F.R. § 42.6(a) and has been prepared using Microsoft® Word in 14-point Times New Roman.

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that on July 16, 2025, true and correct copies of the foregoing document were served via electronic mail to Patent Owner's counsel of record:

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