

Filed on behalf of: Kolon Industries, Inc.

Entered: June 16, 2025

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 IPR2025-00664
Patent 9,617,663

PATENT OWNER'S BRIEF ON DISCRETIONARY DENIAL

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Exhibit List

Exhibit	Description
2001	U.S. Patent Application Publication No. 2014/0238524 A1 (“Love”)
2002	Civil Minutes – General, <i>Kolon Industries, Inc. v. HS Hyosung Advanced Materials Corp. et al.</i> No. 8:24-cv-00415-JVS-JDE (C.D. Cal. Apr. 4, 2025), Dkt. No. 149
2003	Civil Minutes – General, <i>Kolon Industries, Inc. v. Hyosung Advanced Materials Corp. et al.</i> No. 8:24-cv-00415-JVS-JDE (C.D. Cal. Aug. 21, 2024), Dkt. No. 68
2004	Proof of Service of Summons, Complaint, and related documents, <i>Kolon Industries, Inc. v. Hyosung Advanced Materials Corp. et al.</i> No. 8:24-cv-00415-JVS-JDE (C.D. Cal. Mar. 5, 2024), Dkt. No. 15
2005	Hyosung Invalidation Trial Petition, dated Apr. 13, 2022 (original Korean document)
2006	Certified English translation of Hyosung Invalidation Trial Petition, dated Apr. 13, 2022
2007	RESERVED
2008	RESERVED
2009	Exhibit of Defendant Hyosung Advanced Materials Corp.’s Invalidity Contentions, <i>Kolon Industries, Inc. v. Hyosung Advanced Materials Corp. et al.</i> No. 8:24-cv-00415-JVS-JDE (C.D. Cal. Mar. 17, 2025), Dkt. No. 146-7
2010	Patent L.R. 4-3 Joint Claim Construction and Prehearing Statement, <i>Kolon Industries, Inc. v. Hyosung Advanced Materials Corp. et al.</i> No. 8:24-cv-00415-JVS-JDE (C.D. Cal. Feb. 20, 2025), Dkt. No. 133
2011	File History for U.S. Patent Application No. 16/464,350

Exhibit	Description
2012	RESERVED
2013	International Search Report for International Application No. PCT/KR2017/013279
2014	Letter from Kolon Industries, Inc. to Hyosung Advanced Materials, dated Feb. 4, 2021 (original Korean document)
2015	Certified English translation of Letter from Kolon Industries, Inc. to Hyosung Advanced Materials, dated Feb. 4, 2021 (certified English translation)
2016	U.S. Patent No. 6,886,320

I. Introduction

Patent Owner Kolon Industries, Inc. (“Kolon” or “Patent Owner”) respectfully submits that the Director should exercise discretion to deny institution of the Petition filed by HS Hyosung Advanced Materials Corp. (“Hyosung” or “Petitioner”). In particular, the following three bases strongly support discretionary denial of institution.

First, the Director should exercise discretion to deny the Petition under 35 U.S.C. § 325(d) because Petitioner relies on cumulative art to raise substantially the same arguments already addressed and overcome during prosecution of the challenged patent, U.S. Patent No. 9,617,663 (“’663 patent”). In particular, Petitioner’s unpatentability arguments based on Fritsch are substantially the same as those the examiner raised based on Love and ultimately withdrew. Petitioner’s presentation of substantively the same arguments already addressed and overcome during prosecution, under the guise of facially “new” references, warrants denial under 35 U.S.C. § 325(d).

Second, the Director should exercise discretion to deny institution under 35 U.S.C. § 314(a) and the *Fintiv* factors. Rather than efficiently choose the PTAB to determine validity early in the parties’ dispute, Petitioner unjustly sat on its hands and did not file its Petition until the eve of the statutory deadline, causing undue prejudice to Patent Owner. Not surprisingly, during Petitioner’s unexplained delay,

the parties made significant progress in the parallel litigation, including substantial fact and document discovery, the completion of infringement contentions, invalidity contentions, and the filing of a Joint Claim Construction Statement. Petitioner then leveraged its last-minute Petition to argue for and secure a stay of the litigation, further delaying Patent Owner's ability to obtain relief from Petitioner's infringement of Patent Owner's intellectual property rights.

Worse, though Petitioner had more than ample time to develop its unpatentability arguments and evidence, the Petition facially lacks merit, as will be further detailed in Patent Owner's forthcoming Preliminary Response. For example, as particularly relevant to *Fintiv* Factor 6 as well as factors outlined in the March 26, 2025 Memorandum by the Acting Director addressing "Interim Processes for PTAB Workload Management" ("Process Memo"), the Petition relies heavily on an entirely conclusory expert declaration that merely parrots Petitioner's attorney arguments to try to fill in critical missing limitations. This conclusory expert testimony does not deserve weight under the Board's rules and precedent. Petitioner has also raised multiple indefiniteness arguments in the District Court that can be addressed only by that Court, suggesting the PTAB is not an appropriate forum to fully address the '663 patent's validity.

In addition, Patent Owner has a settled expectation that the '663 patent is valid that should not be disturbed. Petitioner's actions warrant discretionary denial

because Petitioner has known about the '663 patent at least since March 2018, yet Petitioner waited almost seven years until the eve of the statutory bar to file its Petition. Additionally, Patent Owner specifically notified Petitioner of the '663 patent and warned Petitioner against infringing the '663 patent as early as February 2021. Petitioner's belated challenge cannot be condoned. Patent Owner also has compelling economic interests in seeking redress to Petitioner's longstanding infringement of the '663 patent.

In sum, Petitioner asks the Board to institute review of a last-minute Petition with arguments that recycle the same subject matter covered during prosecution, with the Petition's main evidence being an expert declaration that parrots Petitioner's attorney arguments word-for-word to try to fill in missing limitations. Such a deficient Petition does not merit occupying the Board's finite resources, and accordingly the Director should exercise discretion to deny institution of the Petition.

II. Overview Of The '663 Patent And The Prior Art Relevant To Discretionary Denial¹

A. The '663 Patent (Ex. 1001)

The '663 patent, entitled "Hybrid Tire Cord and Method for Manufacturing the Same," discloses a hybrid tire cord that "includes a nylon primarily twisted yarn

¹ Summaries of the additional prior art references in the Petition will be included in Patent Owner's forthcoming Preliminary Response.

and an aramid primarily twisted yarn,” where “the nylon primarily twisted yarn and the aramid primarily twisted yarn are secondarily twisted together, and after untwisting of the secondary twisting of the hybrid tire cord having a predetermined length, a length of the aramid primarily twisted yarn is 1.005 to 1.025 times a length of the nylon primarily twisted yarn.” Ex. 1001, Title, Abstract.²

Conventional hybrid tire cord and methods of manufacturing faced significant problems. As the '663 patent explains, in conventional tire cords, “stress is intensely applied to the aramid primarily twisted yarn upon repeated tension and compression of tires, thus inevitably causing low fatigue resistance of tire cord and, disadvantageously, resulting in impossibility of securing safety of tires during long-term high-speed driving.” Ex. 1001, 2:51-56. The '663 patent further notes the challenge of conventional tire cords not being “applicable to ultra-high performance tires.” *Id.*, 3:3-7.

The '663 patent addressed these and other problems in the conventional hybrid tire cord. As the '663 patent explains:

In addition, according to the present invention, after untwisting the cord, the length of aramid primarily twisted yarn is 1.005 to 1.025 times the length of nylon primarily twisted yarn, thereby dispersing stress applied to the hybrid tire cord during repetition of tension/compression

² Emphasis added throughout unless otherwise noted.

of the tire to the aramid primarily twisted yarn as well as the nylon primarily twisted yarn. Consequently, the hybrid tire cord of the present invention having superior fatigue resistance can maintain stability of tires even during long-term high-speed driving. In particular, difference in fatigue resistance occurs when tension/compression deformation is serious, and difference in fatigue resistance is further increased when tension/compression/shearing is repeatedly applied upon actual tire driving.

Ex. 1001, 4:54-67. Thus, claim 1 of the '663 patent recites that the “tension applied to the nylon filament yarn in the second step is higher than tension applied to the aramid filament yarn in the first step in such an amount that, if the secondary twist of the hybrid tire cord with a predetermined length were untwisted, the aramid primarily twisted yarn would be 1.005 to 1.025 times longer than the nylon primarily twisted yarn.”

B. Love (Ex. 2001)

Love is a reference that the examiner cited and applied against the '663 patent during prosecution. Ex. 1002, 97-99. Love, entitled “Unbalanced Hybrid Cords and Methods for Making on Cable Cording Machines,” discloses “[a] hybrid cord formed from a plurality of component plies wherein at least one of the plies has a length that is from 1 to 50 percent longer than the other plies and a method of providing a cord with predetermined twist and component ply lengths.” Ex. 2001, Title, Abstract.

Love discloses a length difference between an aramid ply and a nylon ply, where the aramid ply is longer than the nylon ply. As Love explains, “[t]he hybrid cord may comprise a single ply of a high modulus material and a single ply of a low modulus material, such as at least one p-aramid ply and at least one nylon ply, wherein the shortest length ply is nylon.” Ex. 2001, [0015]. Love also discloses that “[t]he hybrid cord can be made of a plurality of plies, wherein there is zero twist in the plies and at least one of the plies has a length that is from 1 to 50 percent longer than the other plies or 1 to 35% longer or even 1 to 25% longer.” *Id.*, [0014]. Further, Love teaches that “[o]ther cords had p-aramid yarns of a length 5%, 10% and 20% longer than the nylon yarns from using pulleys.” *Id.*, [0031]. Love’s claim 1 recites that “one of the plies has a length that is from 1 to 50 percent longer than the other plies,” and claim 4 recites that “one of the plies has a length that is from 1 to 25 percent longer than the other plies.” *Id.*, cls. 1, 4.

C. Fritsch (Ex. 1011)

Fritsch, which is asserted in both of Petitioner’s proposed grounds, is titled “Hybrid Cabled Cord and a Method to Make It,” and “is directed to a hybrid cabled cord comprising: at least two yarns having different properties and an unbalanced configuration wherein the hybrid cabled cord has improved tensile strength retention.” Ex. 1011, Title, Abstract. Fritsch describes the particular materials to use and the meaning and usage of the term “unbalanced configuration.”

Fritsch explains how materials such as “polyamide,” including “aramid, nylon-6, nylon-6,6 and nylon-4,6” are inferior for tire cord as compared to polyester materials such as “PET” and “PEN.” Ex. 1011, [0029]. Fritsch states that “[p]olyester, specifically, polyethylene terephthalate (PET), has many advantages over cords made of rayon or polyamide.” *Id.*, [0004]. “Polyamide has higher strength and durability compared to rayon but has poor dimensional stability.” *Id.* In comparison, “PET tire cord possesses high strength, good durability, better modulus and low creep.” *Id.* Further, “[a]nother polyester, polyethylene naphthalate (PEN), provides even better mechanical properties, including modulus, breaking strength and elongation, for use in tires than PET.” *Id.*

Fritsch explains that an “unbalanced configuration” is quantified by a “coring level,” which is a measure of the length difference between the yarns:

The phrase “unbalanced configuration” as used herein means that the at least two yarns have different lengths and therefore have a coring level which is not equal to zero[.] The phrase “balanced configuration” as used herein refers to a yarn having a coring level equal to zero. The difference in lengths is quantitated by determining the coring level. The coring level is measured by taking a sample of one meter of cabled cord and untwisting the cable in order to separate the two yarns which compose it. The so-separated yarns are then untwisted by the same number of turns as it took to separate the cable, and in the opposite direction, to yield the two yarns in their as-fed state. The length of each

constituent yarn is then measured on the yarn in its as-fed state, and the coring level calculated using the following equation:

$$\text{Coring} = (A - B) / (B) \quad (1)$$

wherein A is the length of the yarn having the higher modulus and B is the length of the yarn having the lower modulus.

Ex. 1011, [0019]-[0020]. Thus, Fritsch measures the length difference between the yarns with a “coring level,” which is a percentage calculated by dividing the length difference between the two yarns by the length of one yarn.

Fritsch includes a Table 1 that discloses exemplary cords:

TABLE 1								
Inv. Ex.	Comp. Ex.	Cord components	Coring level	Breaking Strength (N)	Elongation at Break (%)	LASE at 1.6% (N)	LASE at 3% (N)	Elongation (%) at 45 N
1	A	PEN/PEN	0	199.2	10.4	21.4	48.7	2.7
		PEN/PET	-15%	154	n.d.	n.d.	n.d.	n.d.
		PEN/PET	-12.2%	154.3	9.3	20.8	45.4	3.1
		PEN/PET	-9.2%	160.8	10.2	17.5	40.5	3.4
		PEN/PET	-6.3%	164.7	11.1	16.5	32.8	4.0
5	B	PEN/PET	-3.2%	170.1	11.4	15.7	33.9	3.9
		PEN/PET	0	180.5	12.4	15	32.7	4.1
		PEN/PET	0.9%	184	12.8	14.6	33.7	4.1
		PEN/PET	4.5%	184.5	13.8	13.8	30.8	4.3
		PEN/PET	7.7%	183.5	15.4	13.2	28.6	4.6
9	C	PEN/PET	13.9%	170.4	16.3	12.8	27.6	4.7
		PEN/PET	15%	170	n.d.	n.d.	n.d.	n.d.
		PET/PET	0	177.7	18.9	12.5	26.2	5.2

Ex. 1011, Table 1. Coring levels in the examples range from -15% to 15%. *Id.*

As shown on the “Cord components” column in Fritsch’s Table 1 above, all examples are made with polyesters of “PEN” or “PET.” Ex. 1011, Table 1. None of Fritsch’s examples with identified Coring levels are made with aramid or nylon.

Fritsch states that, according to its invention, “the breaking strength can be maximized at a coring level of about 5%.” *Id.*, [0042]. Fritsch further teaches that “[p]referred combinations are two yarns having different moduli with a non-zero coring level no greater than about 25% and no less than about -25%.” *Id.*, [0029]. In addition, Fritsch states that, “to optimiz[e] a hybrid cabled cord,” one would “evaluate the properties of interest at a range of coring levels, for instance, -30% to 30%, in order to optimize the hybrid cabled cord.” *Id.*, [0028].

Lastly, Fritsch describes that, “[i]n a preferred embodiment[,] one of the two yarns comprises polyethylene terephthalate [PET] and the second of at least two yarns comprises polyethylene naphthalate [PEN] and the coring level is between about 3% to about 15%.” Ex. 1011, Abstract.

III. The Director Should Exercise Discretion To Deny Institution Under Section 325(d)

Section 325(d) authorizes the Director not to institute review if the challenge to the patent is based on “substantially the same prior art or arguments” previously presented to the Office. 35 U.S.C. § 325(d); *see also* 37 C.F.R. § 42.4(a). Under § 325(d), the Board follows a 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 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) (“*Advanced Bionics*”).

Specifically, the Director considers the following non-exclusive factors:

- (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;
- (c) the extent to which the asserted art was evaluated during examination, including whether the prior art was the basis for rejection;
- (d) the extent of the overlap between the arguments made during examination and the manner in which Petitioner relies on the prior art;
- (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.

See 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) (“*Becton*”); *see also Advanced Bionics*, Paper 6 at 9, n.10.

The *Advanced Bionics* framework and *Becton* factors strongly support discretionary denial here. Though Fritsch was not cited during prosecution, it is cumulative of the Love reference with respect to the relevant claim features, and Petitioner's arguments about Fritsch parallel assertions made by the examiner with respect to Love. Specifically, Petitioner presents arguments alleging disclosure of the claim limitation “the aramid primarily twisted yarn would be 1.005 to 1.025

times longer than the nylon primarily twisted yarn” based on Fritsch that are substantially cumulative to the arguments that the examiner raised for this claim limitation based on Love. But Love was overcome during prosecution, and Fritsch has the same failings. Moreover, and importantly, Petitioner makes no showing that the examiner materially erred. Thus, institution should be denied under § 325(d).

A. *Advanced Bionics* Step 1 (*Becton* Factors (a), (b), And (d)): Substantially The Same Art And Argument Was Previously Presented To The USPTO

Petitioner raises two grounds based on different primary references, but both rely on the same teachings and the same argument for the claimed length difference. Ground 1 is based on Tamura, Fritsch, Rowan, and optionally Buchanan, and Ground 2 is based on Fritsch alone. Pet. 3. In both grounds, Petitioner relies on the disclosure in Fritsch to argue that the limitation in claim 1, “tension applied to the nylon filament yarn in the second step is higher than tension applied to the aramid filament yarn in the first step in such an amount that, if the secondary twist of the hybrid tire cord with a predetermined length were untwisted, the aramid primarily twisted yarn would be 1.005 to 1.025 times longer than the nylon primarily twisted yarn,” (referred to in the Petition as 1[f]) is disclosed or rendered obvious. *See id.*, 44-46, 58-60. But Petitioner’s arguments are not materially different from those arguments considered during prosecution.

During prosecution of the '663 patent, the examiner raised Love and specifically found the '663 patent claims patentable over Love's teachings. Initially, the examiner found that Love teaches a "hybrid tire cord ... comprising a nylon primarily twisted yarn and an aramid primarily yarn." Ex. 1002, 97. In particular, the examiner stated that Love discloses "the aramid primarily twisted yarn would be 1.005 - 1.025 times the length of the nylon primarily twisted yarn." *Id.* (citing Ex. 2001 (Love), cl. 1). The examiner further found that Love in view of Shepherd (U.S. Pat. No. 4,155,394) rendered the claimed length difference obvious because "the ordinary skilled artisan would understand that degree of twist and longer length both contribute to the breaking length of the material, and finding the working range for the aramid twist being 0.1 - 5% lower than nylon would have been within the abilities of the ordinarily skilled artisan, through routine experimentation." *Id.*, 98. The examiner stated that pending independent claim 9 would be allowable if amended to clarify that the claim phrase "after untwisting" to make clear that "*if* the product were untwisted, it would have certain characteristics." *Id.*, 96, 99. In response, Patent Owner amended claim 9 (which became issued claim 1) to clarify this language, and the examiner allowed it and its dependent claims with a minor wording change. *Id.*, 12-13, 17, 66-69.

Petitioner's arguments, however, attempt to reuse the same argument overcome during prosecution. Petitioner argues that Fritsch discloses or renders

obvious “tension applied to the nylon filament yarn in the second step is higher than tension applied to the aramid filament yarn in the first step in such an amount that, if the secondary twist of the hybrid tire cord with a predetermined length were untwisted, the aramid primarily twisted yarn would be 1.005 to 1.025 times longer than the nylon primarily twisted yarn.” Pet. 44-46, 58-60. But Fritsch offers nothing beyond Love’s disclosure, and the examiner found that Love did not disclose this limitation. Ex. 1002, 99.

Fritsch discloses a “hybrid cabled cord” of “at least two yarns having different properties and an unbalanced configuration wherein the hybrid cabled cord has improved tensile strength retention.” Ex. 1011, Abstract. “The phrase ‘unbalanced configuration’ as used herein means that the at least two yarns have different lengths.” *Id.*, [0019]. To quantify the length difference of the yarns, Fritsch introduces a “coring level,” which “is measured by taking a sample of one meter of cabled cord,” “untwisting the cable,” separating and untwisting the yarns to return them to their “as-fed state,” measuring the length difference, and dividing that difference by the length of one of the yarns to calculate a percentage. *Id.* The calculation is performed through the equation “Coring=(A-B)/(B).” *Id.*

Petitioner argues that “Fritsch mentions that a ‘[p]referred’ Coring level is a ‘non-zero’ value ‘no greater than about 25% and no less than about -25%,’ which includes the claimed range.” Pet. 45 (citing Ex. 1011, [0029]) (Ground 1); *see also*

id., 58-59 (same for Ground 2). Petitioner also points to an example in Fritsch that “in Table 1, one of the ‘inventive cords’ that was tested had a Coring level of 0.9%.” Pet. 45 (citing Ex. 1011, [0040]); *see also id.*, 59 (same for Ground 2).

Petitioner's argument is substantially the same as that the examiner raised against other claims based on Love but found insufficient to reject pending claim 9, which issued as claim 1. Petitioner asserts that a length difference of 25% to -25% includes the claimed range of 0.5% to 2.5%. Pet. 45, 58-59. But this is merely a rehash of the examiner's reliance on Love, as the examiner considered Love's disclosure of a 1% to 50% length difference in Love's claim 1, as well as a disclosure of a 1% to 25% length difference in claim 4, which is even narrower than the length difference in Fritsch. Ex. 2001 (Love), cls. 1, 4. Petitioner also argues that cords in Fritsch were tested with a length difference of 0.9%, but as Petitioner admits, “Fritsch does not expressly disclose an aramid-nylon tire cord with a Coring level of 0.9%” and the challenged claims require aramid-nylon tire cord. Pet. 59; *see also* Ex. 1001, cl. 1.

Instead, as shown in Fritsch's Table 1 below, the 0.9% coring level is directed to a cord made of polyesters, “PEN/PET.” Ex. 1011, Table 1. In fact, all examples in Fritsch's Table 1 are “PEN” or “PET” cords.

TABLE 1								
Inv. Ex.	Comp. Ex.	Cord components	Coring level	Breaking Strength (N)	Elongation at Break (%)	LASE at 1.6% (N)	LASE at 3% (N)	Elongation (%) at 45 N
1	A	PEN/PEN	0	199.2	10.4	21.4	48.7	2.7
		PEN/PET	-15%	154	n.d.	n.d.	n.d.	n.d.
		PEN/PET	-12.2%	154.3	9.3	20.8	45.4	3.1
		PEN/PET	-9.2%	160.8	10.2	17.5	40.5	3.4
		PEN/PET	-6.3%	164.7	11.1	16.5	32.8	4.0
5	B	PEN/PET	-3.2%	170.1	11.4	15.7	33.9	3.9
		PEN/PET	0	180.5	12.4	15	32.7	4.1
		PEN/PET	0.9%	184	12.8	14.6	33.7	4.1
		PEN/PET	4.5%	184.5	13.8	13.8	30.8	4.3
		PEN/PET	7.7%	183.5	15.4	13.2	28.6	4.6
9	C	PEN/PET	13.9%	170.4	16.3	12.8	27.6	4.7
		PEN/PET	15%	170	n.d.	n.d.	n.d.	n.d.
		PET/PET	0	177.7	18.9	12.5	26.2	5.2

Id. (annotated). Fritsch explains that “[p]olyester, specifically, polyethylene terephthalate (PET), has many advantages over cords made of rayon or polyamide [e.g., aramid, nylon]. ... Polyamide has higher strength and durability compared to rayon but has poor dimensional stability. PET tire cord possesses high strength, good durability, better modulus and low creep. Another polyester, polyethylene naphthalate (PEN), provides even better mechanical properties, including modulus, breaking strength and elongation, for use in tires than PET.” Ex. 1011, [0004].

Similarly, the Love reference that the examiner relied on describes a length difference within the claimed range, but only in a tire cord that uses a different combination of materials—“the *p-aramid* ply is from 2 to 7 percent longer than the *m-aramid* ply.” Ex. 2001 (Love), [0016]. Just as the plies that Petitioner points to in Fritsch for claim 1 are not aramid and nylon, Love likewise disclosed plies with

the claimed length difference also were not aramid and nylon. Moreover, with respect to the claimed length difference, Love's disclosure is superior to the disclosure in Fritsch that Petitioner relies on because, unlike Fritsch, Love discloses the specific length difference between aramid and nylon plies. *Id.*, [0015] ("The hybrid cord may comprise a single ply of a high modulus material and a single ply of a low modulus material, such as at least one p-aramid ply and at least one nylon ply, wherein the shortest length ply is nylon."); *see also id.* [0010] ("one ply can be para-aramid and the other ply can be nylon"), cls. 1, 6 ("at least one p-aramid ply and at least one nylon ply" where "at least one of the plies has a length that is from 1 to 50 percent longer than the other plies").

Accordingly, with respect to this critical claim feature, Fritsch is merely cumulative to the examiner's consideration and reliance on Love. But although Love was overcome during prosecution, Petitioner recycles what already happened during prosecution and raises art and arguments that are substantially the same. Petitioner's efforts should be denied.

The Petition's attempts to equate the claimed length difference of aramid and nylon with Fritsch's PEN and PET brush aside the criticality of the claimed materials. And, to the extent that Petitioner's expert testimony is meant to fill in the missing claim requirement of the aramid/nylon cord length difference with Fritsch's PEN/PET disclosures, his testimony is due little, if any, weight. The Petition alleges

that, “[t]o the extent Patent Owner argues that Fritsch does not expressly disclose an aramid-nylon tire cord with a Coring level of 0.9%, a POSITA would have considered it obvious to apply Fritsch’s teaching of a 0.9% Coring level to the nylon-aramid hybrid cord taught by Fritsch” because, “[f]or example, a Coring level of 0.9% had a good balance of high Breaking Strength of 184 (second highest among the tested cords) and a relatively high Elongation at Break percentage of 12.8%.” Pet. 59-60 (citing Ex. 1003, ¶182). But as explained below in Section IV.E, Petitioner’s expert, Dr. Rust, merely parrots these attorney arguments in the Petition on this critical claim limitation, and his declaration adds no reasoning or evidence to support these bare conclusions.

Dr. Rust’s conclusory testimony regurgitating Petitioner’s assertions merits little, if any, weight. *See Mirror Worlds Techs, LLC v. Meta Platforms, Inc.*, 122 F.4th 860, 875 (Fed. Cir. 2024) (“unsupported expert opinions do not create a genuine issue of material fact”); *Xerox Corp. v. Bytemark, Inc.*, IPR2022-00624, Paper 9 at 15-17 (PTAB Aug. 24, 2022) (precedential) (according “little weight” to testimony that contains a verbatim restatement of a petition’s conclusory assertions without additional supporting evidence or reasoning, also noting it is “particularly problematic in cases where, like here, expert testimony is offered not simply to provide a motivation to combine prior-art teachings, but rather to *supply a limitation missing from the prior art*”). Dr. Rust does not explain, for example, why the

“balance” for the example in Fritsch is “good” or why a POSITA would have departed from Fritsch’s superior examples having a Coring level from about 3% to about 15%, outside the claimed range, absent hindsight. And the properties of an aramid/nylon hybrid tire cord (as claimed) and a PEN/PET hybrid tire cord (as in the examples of Fritsch’s Table 1) are significantly different, as will be addressed in the Patent Owner Preliminary Response, such that a POSITA would not have found it obvious that Fritsch’s teachings in Table 1 would apply to aramid/nylon cord.

Thus, Petitioner presents substantially the same argument for disclosure of the claimed length difference as the examiner did during prosecution. There are notable “similarities ... between the asserted art and the prior art involved during examination” (*Becton* factor (a)), “the asserted art and the prior art evaluated during examination” are cumulative at least with respect to this limitation (*Becton* factor (b)), and there is substantial “overlap between the arguments made during examination and the manner in which Petitioner relies on the prior art” (*Becton* factor (d)). The first part of *Advanced Bionics* therefore is satisfied.

B. *Advanced Bionics* Step 2 (*Becton* Factors (c), (e), And (f)): Petitioner Has Made No Showing Of Material Examiner Error

The second prong of *Advanced Bionics* is also satisfied because Petitioner does not show that the Examiner erred in a manner material to patentability. It is the Petitioner’s burden to affirmatively demonstrate that the Office committed material error in issuing the challenged patent, but Petitioner fails to do so. *See* Pet. 63; *see*

also e.g., Advanced Bionics, Paper 6 at 9 (“At bottom, this framework reflects a commitment to defer to previous Office evaluations of the evidence of record unless material error is shown.”).

Here, Petitioner does not explain how the examiner’s acknowledgment that Love failed to disclose the claimed invention was erroneous in any respect. Petitioner only states that “[t]he same or substantially the same prior art or arguments were *not* previously were [sic] presented to the Office. None of the references relied on were considered or cited.” Pet. 63 (emphasis in original). But Petitioner does not show error; rather, Petitioner provides no evidence or argument that Fritsch is different from Love or includes specific teachings that “impact patentability of the challenged claims.” *Ecto World LLC v. RAI Strategic Holdings Inc.*, IPR2024-01280, Paper 13 at 5-6 (PTAB May 19, 2025) (precedential).³ The examiner applied Love, which is (at minimum) “substantially the same prior art” as Fritsch with respect to critical claimed features, but Petitioner has not—and cannot—show that the examiner was incorrect in allowing the claims. *Id.*

³ Petitioner’s approach “improperly shifts Petitioner’s burden to demonstrate material error onto the Board” (and indeed, onto Patent Owner to rebut undeveloped contentions). *Ecto World*, IPR2024-01280, Paper 13 at 6 n.2.

The Board consistently exercises its discretion to deny institution when, as here, a petitioner does not adequately address whether the Office materially erred. *See Wolfspeed, Inc. v. Trs. of Purdue Univ.*, IPR2022-00761, Paper 9 at 14-15 (PTAB Nov. 8, 2022) (exercising its discretion under § 325(d) to not institute IPR because the proffered art was cumulative to or substantially the same as art previously presented to the Office and petitioner did not address whether the Office materially erred); *see also Darfon Elecs. Corp. v. Shipman*, IPR2022-01008, Paper 11 at 14 (PTAB Dec. 2, 2022) (same); *Ecto World*, IPR2024-01280, Paper 13 at 6 (generalized statements of petition's strength inadequate to show error). Further, any "additional evidence and facts presented in the Petition" here do not "warrant reconsideration of the prior art or arguments" (*Becton* factor (f)) because that additional evidence (e.g., Dr. Rust's declaration) is due little weight as it merely repeats Petitioner's deficient arguments, as detailed above.

Thus, because the Petition presents only the same or substantially the same prior art and arguments previously presented during prosecution, and because Petitioner has failed to make any sufficient showing of error by the Office, the Director should exercise discretion and deny institution under 35 U.S.C. § 325(d). This is precisely what § 325(d) is meant to accomplish: "a commitment to defer to previous Office evaluations of the evidence of record unless material error is shown." *Advanced Bionics*, Paper 6 at 9. The Board should not dedicate resources

to Petitioner's recycling of old arguments and should instead defer to the examiner's correct previous evaluation of materially the same evidence.

IV. The *Fintiv* Factors Favor Discretionary Denial

The Petition should also be denied pursuant to 35 U.S.C. § 314. Section 314(a) states that the "Director *may not* authorize an inter partes review to be instituted unless the Director determines that the information presented in the petition ... 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." 35 U.S.C. § 314(a). In determining whether to exercise discretionary power under § 314(a), the balance of six factors, set forth in *Apple Inc. v. Fintiv, Inc.*, is evaluated:

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 petition 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.

IPR2020-00019, Paper 11 at 6 (PTAB Mar. 20, 2020) (precedential) ("*Fintiv*").

The *Fintiv* factors favor discretionary denial in this proceeding. First, Petitioner unreasonably delayed its filing of the IPR petition until the eve of the

statutory deadline, so the parties invested substantially in the parallel proceeding during Petitioner's delay. Second, Petitioner relies heavily on an expert declaration that largely parrots Petitioner's attorney arguments. Third, Petitioner's multiple indefiniteness arguments, which cannot be addressed by the Board, suggest validity challenges as a whole are better left to the District Court. Accordingly, the Petition should be denied.

A. *Fintiv* Factors 1 And 2 Are Outweighed By Other Considerations

The first and second *Fintiv* factors consider whether the court granted a stay and the proximity of the Court's trial date to the Board's projected statutory deadline for a final written decision.

The District Court litigation is stayed; however, this fact is not dispositive. *See* Ex. 2002 (*Kolon Indus., Inc. v. HS Hyosung Advanced Materials Corp. and HS Hyosung USA, Inc.*, No. 8:24-cv-00415-JVS-JDE (C.D. Cal. Apr. 4, 2025), Dkt. 149) (order granting Petitioner's motion to stay). The stay was granted pending resolution of the present Petition and two other Petitions filed by Petitioner,⁴ and the District Court noted that "if the PTAB does not institute review, delay due to an unnecessary stay will be minimal." Ex. 2002, 5-7 (*Kolon*, No. 8:24-cv-00415, Dkt.

⁴ Petitioner filed two other IPRs against Patent Owner's patents from the same District Court litigation. *See* IPR2025-00662, IPR2025-00663.

149). So, if the Petition (and/or others filed by Petitioner) is denied, it is likely that the District Court case would resume and that a trial would be held at or before a final written decision would be due. Prior to the stay, the trial date in the District Court was set for February 2026. *See* Ex. 2003, 1 (*Kolon*, No. 8:24-cv-00415, Dkt. 68). The Board's Institution Decision in the present IPR is not due until October 2025, and if the Petition is instituted, the Board's projected statutory deadline for a final written decision is not until October 2026. *See* 37 C.F.R. §§ 42.100(c), 42.107, 42.108; 35 U.S.C. § 314(b). Thus, the original trial date in the District Court will be eight months before the Board's projected deadline for a final written decision. And even if the District Court schedule were extended for a few months because of the current stay, the District Court would hold trial before the Board would issue a final determination in this proceeding.

Further, Factors 1 and 2 represent only two “non-dispositive factors,” and all factors must be weighed “as part of a balanced assessment of all relevant circumstances of the case, including the merits.” *Fintiv*, Paper 11 at 5 (internal quotation marks omitted).

B. *Fintiv* Factor 3 Supports Denial Because Petitioner Unreasonably Delayed Its Filing And The Parties Have Substantially Invested In Parallel Litigation

Fintiv Factor 3 relates to both the timing of the Petition and the degree of investment by the parties and the District Court in any parallel proceeding. *Fintiv*,

Paper 11 at 9-12. Here, Petitioner delayed filing its Petition until the eve of its statutory deadline, yet fails to explain the delay.⁵ Because of Petitioner's delay, the parties invested substantial resources litigating in District Court, including preparing for claim construction.

The AIA was meant to provide an efficient forum for parties to resolve validity disputes, but Petitioner's litigation strategy has focused on delaying the District Court litigation rather than efficiently resolving any dispute about the '663 patent's validity. First, Petitioner has known of all of its primary references in this Petition—Tamura, Fritsch, and Rowan (*see* Pet. 3)—as early as April 2022 when

⁵ Petitioner admits that Hyosung USA, Inc. (now HS Hyosung USA, Inc., "HUSA") is a real party-in-interest ("RPI"). Pet. 66. The one-year deadline for Petitioner to file an IPR started on February 29, 2024, when HUSA, its RPI, was served with the complaint. *See* 35 U.S.C. § 315(b); Ex. 2004 (*Kolon*, No. 8:24-cv-00415, Dkt. 15).

Petitioner relied on Tamura, Fritsch⁶, and Rowan⁷ to challenge the validity of the Korean counterpart of another patent under dispute in the District Court litigation, U.S. Patent No. 9,789,731 (“’731 patent”), at the Korean Intellectual Property Office (“KIPO”). Exs. 2005 (original), 2006 (translation) at 17, 56-57. Petitioner cited the

⁶ In the Korean petition, Petitioner relied on Fritsch (U.S. Pat. No. 6,601,378, “Fritsch 378”) as a reference material. Ex. 2006 (translation) at 56-57. Fritsch in the present Petition (U.S. Pat. App. Pub. No. 2003/0159768) is a continuation of Fritsch 378, sharing the same figures and specifications.

⁷ In the Korean petition, Petitioner relied on Rowan (U.S. Pat. App. Pub. No. 2003/0060540, “Rowan 540”) as a reference material. Ex. 2006 (translation) at 57. Rowan in the present Petition (U.S. Pat. No. 6,886,320, “Rowan 320,” cited at Pet. v) is a published patent of the Rowan 540 published application, sharing the same figures and specifications. However, although the Petition appears to cite to Rowan 320, Petitioner attached a different Rowan (U.S. Pat. No. 7,159,381) as Ex. 1007. Rowan 320 is attached as Ex. 2016.

same references in its invalidity contentions in the District Court litigation in December 2024. *See* Ex. 2009 at 8-11, 15-19, 23-25.⁸

The only reference that Petitioner cites as a prior art reference for the first time in the Petition is Buchanan (Ex. 1010), but Petitioner only relies on Buchanan as an “optional[]” reference in Ground 1 (*see* Pet. 3) to argue that the simultaneous and continuous twisting limitations of claim 1 of the '663 patent are rendered obvious. *See* Pet. 36-37, 40. That fails to explain Petitioner's waiting until the statutory deadline—despite knowing of its references for years—because the combinations used need not be identical between parallel proceedings if there is nonetheless “substantial overlap.” *See Apple Inc. v. Optis Cellular Tech. LLC*, IPR2020-00465, Paper 13 at 20-21 (PTAB Sept. 17, 2020) (Factor 4 favored discretionary denial as “substantial overlap of issues concerning the prior art” existed, because even though “the combinations of four references” Petitioner used in the District Court and in the petition differed, “two of the references, including the primary reference ..., are the same in both combinations.”). Petitioner waited until the one-year deadline to file its Petition, almost three months after the invalidity contentions were served in the

⁸ Rowan in Petitioner's invalidity contentions (U.S. Pat. App. Pub. No. 2005/0249949) is a division of the Rowan in the present Petition (U.S. Pat. No. 6,886,320), sharing the same figures and specification.

District Court litigation and almost three years after raising the same primary references against the Korean counterpart to the '731 patent.

It is hard to fathom why Petitioner would wait until the one-year deadline except to try to obtain a tactical advantage. *See Next Caller Inc. v. TrustID, Inc.*, IPR2019-00961, -00962, Paper 10 at 15-16 (PTAB Oct. 16, 2019) (“[Petitioner’s] delay in filing the Petition weighs in favor of the Board exercising discretion to deny institution under § 314.”). Petitioner argues this factor “weighs against denying institution” because it “diligently prepared and filed this Petition well before the statutory deadline,” (Pet. 65) but that argument is both inaccurate and conclusory. Petitioner has failed to provide any explanation of how it was purportedly diligent or even tried to justify waiting until the last minute to file its Petition. *Ericsson Inc. v. Active Wireless Techs. LLC*, IPR2024-00886, Paper 8 at 10-11 (PTAB Nov. 12, 2024) (“Absent argument or evidence supporting Petitioner’s diligence, we are not persuaded that filing the Petition ‘in advance of the statutory deadline’ weighs in favor of institution.”). Factor 3 favors exercising discretionary denial “if the petitioner cannot explain the delay in filing its petition” (*Fintiv*, Paper 11 at 11-12), which is precisely the situation here. Petitioner cannot excuse its delay and has not even tried to do so.

Worse still, while Petitioner delayed filing this Petition, Petitioner continued to litigate in the District Court. The Board has acknowledged that “notwithstanding

that a [challenger] has one year to file a petition, it may impose unfair costs to a patent owner if the petitioner ... waits until the district court trial has progressed significantly before filing a petition at the Office.” *Fintiv*, Paper 11 at 11. That reasoning applies here: because of Petitioner’s delay, the parties made substantial investments in the parallel proceeding. The parties have engaged in three rounds of motions to dismiss at the District Court. Both infringement contentions and invalidity contentions have been served in September 2024 and December 2024, respectively. The parties have served and responded to more than 400 discovery requests and made multiple rounds of document production. In addition, the parties actively engaged in claim construction by completing claim construction exchanges, culminating in the filing of a Joint Claim Construction and Prehearing Statement. *See* Ex. 2010 (*Kolon*, No. 8:24-cv-00415, Dkt. 133); *Comcast Cable Commc’ns, LLC v. Touchstream Techs., Inc.*, IPR2024-00325, Paper 13 at 9-10 (PTAB July 26, 2024) (agreeing with the patent owner that the petitioner did not show diligence in filing the petition when it was filed almost seven months after learning of the asserted claims and almost five months after serving its initial invalidity contentions). Had Petitioner expeditiously filed its Petitions, considerable investment in the litigation plainly could have been avoided.

Thus, because Petitioner unreasonably delayed in filing its Petition, resulting in significant investment in the parallel proceeding, this factor heavily supports a denial.

C. *Fintiv* Factor 4 Supports Denial Because Petitioner Presents Arguments That Significantly Overlap With Arguments Presented To The District Court

Significant overlap exists between this Petition and the District Court litigation because “the same or substantially the same claims, grounds, arguments, and evidence” presented in the District Court litigation are recycled here, which favors denying the Petition. *Fintiv*, Paper 11 at 12.

Petitioner acknowledges that all challenged claims are asserted in the District Court litigation. Pet. 65. And, Petitioner's invalidity contentions in the District Court litigation allege both anticipation and obviousness based on all but one of the references in its Petition. *See* Ex. 2009 (*Kolon*, No. 8:24-cv-00415, Dkt. 146-7, Ex. 6, Hyosung's de-designated invalidity contentions) at 8-11 (listing prior art references), 15-19 (listing prior art references), 23-25 (listing potential obviousness combinations, including based on Tamura and Fritsch). This “rais[es] the specter of significant overlap and duplication of efforts.” *Samsung Display Co. v. Pictiva Displays Int'l Ltd.*, IPR2024-00855, Paper 12 at 11 (PTAB Nov. 19, 2024) (“factor four favors denial”).

Further, Petitioner has made no case-narrowing stipulations (e.g., a *Sotera*-type stipulation) that might mitigate the overlap—a fact which the Board has acknowledged is “highly relevant.” March 24, 2025 Memorandum regarding “Guidance on USPTO’s Recission of ‘Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings with Parallel District Court Litigation’” at 2-3. The Board’s FAQ regarding the Interim Processes for PTAB Workload Management (<https://www.uspto.gov/patents/ptab/faqs/interim-processes-workload-management>) (“FAQ”) states that a “petitioner should file a *Sotera* or *Sand* stipulation as soon as practicable, so that a patent owner may address the impact of the stipulation in its discretionary denial brief.” FAQ 14. As of this filing, Petitioner has filed no stipulation, and thus Patent Owner cannot address the effect of such a stipulation; if Petitioner offers or files a stipulation after this filing, Patent Owner intends to request a reply brief to address this development. FAQ 2 (“Leave to file further briefing may be permitted by the Director for good cause.”).

D. *Fintiv* Factor 5 Supports Denial Because Petitioner And Real Party-In-Interest Are The Sole Defendants In The Parallel Proceeding

Factor 5 favors discretionary denial. In the District Court litigation, Patent Owner is the Plaintiff and Petitioner is one of the two Defendants. Petitioner admits that the other defendant, HUSA, is a RPI. Pet. 66. Factor 5 thus weighs in favor of

discretionary denial because “the petitioner and the defendant in the parallel proceeding are the same party.” *Fintiv*, Paper 11 at 13-14.

E. *Fintiv* Factor 6 Supports Denial Because The Expert Declaration Repeats Attorney Arguments And Petitioner's Indefiniteness Arguments Are Better Left To The District Court

The sixth factor of the *Fintiv* analysis favors denial because the Petition's merits are weak, as Patent Owner will establish more fully in its forthcoming Preliminary Response. *See* FAQ 25 (“[W]hen filing a brief for discretionary denial, a patent owner may direct attention to an anticipated POPR and evidence for a discussion of the merits.”).

As one example, the weaknesses in Petitioner's arguments are evidenced by its lack of reasoned expert testimony.⁹ The Petition relies extensively on an expert declaration from Dr. Rust. *See generally* Pet. and Ex. 1003. But aside from content on the expert's background, materials considered, and discussion of applicable legal standards, the declaration simply parrots the attorney arguments in the Petition, largely using exactly the same wording in the Petition, and adding no evidence to

⁹ Whether considered as part of Factor 6 under the *Fintiv* framework or separately, the Director may consider such additional factors in discretionary denial. *See* Process Memo at 2-3.

support Dr. Rust's opinions. The comparison table below shows a few examples, with identical language highlighted.

Petition 25-28.	Rust Decl. (Ex. 1003), ¶¶91-94.
A POSITA would have been motivated to combine these teachings in view of the benefits described by Fritsch. Ex. 1003, ¶¶90-91. Specifically, Fritsch notes that its method results in a “hybrid cabled cord of polymeric materials having excellent properties at a reduced capital cost and is useful as a tire cord.” Ex. 1011, ¶2. Fritsch explains that in hybrid cords (<i>i.e.</i> where the cord is made up of multiple types of material), it is typical for one yarn having a higher modulus (<i>i.e.</i> a material's ability to resist being deformed) will have a higher twist level compared to the yarn with a lower modulus so that the twisted yarns will break simultaneously. <i>Id.</i>, ¶5. Fritsch notes that conventionally, the design of cabling machines “is intended to achieve a balanced tension control in the cabled cord produced which effectively means that the two yarns are pulled off with the same rate and thus equal lengths are incorporated into the cabled cord.” <i>Id.</i>, ¶24. However, Fritsch's inventors discovered that “modulat[ing] the tension on the individual plies” can result in an “unbalanced configuration” where one yarn is longer than the other when untwisted. This results in a cord with “greater tensile strength retention.” <i>Id.</i>, ¶27. Fritsch describes the difference in length of the yarns as a Coring level,	91. A POSITA would be motivated to combine these teachings in view of the benefits described by Fritsch. Specifically, Fritsch notes that its method results in a “hybrid cabled cord of polymeric materials having excellent properties at a reduced capital cost and is useful as a tire cord.” Fritsch at ¶2. Fritsch explains that in hybrid cords (<i>i.e.</i> where the cord is made up of multiple types of material), it is typical for one yarn having a higher modulus (<i>i.e.</i> a material's ability to resist being deformed) will have a higher twist level compared to the yarn with a lower modulus so that the twisted yarns will break simultaneously. <i>Id.</i>, ¶5. Fritsch notes that conventionally, the design of cabling machines “is intended to achieve a balanced tension control in the cabled cord produced which effectively means that the two yarns are pulled off with the same rate and thus equal lengths are incorporated into the cabled cord.” <i>Id.</i>, ¶24. However, Fritsch's inventors discovered that “modulat[ing] the tension on the individual plies” can result in an “unbalanced configuration” where one yarn is longer than the other when untwisted. This results in a cord with “greater tensile strength retention.” <i>Id.</i>, ¶27. Fritsch describes the difference in length of the yarns as a Coring level, which is the percentage difference in

which is the percentage difference in length of the higher modulus yarn relative to the lower modulus yarn. <i>Id.</i>, ¶¶19-20. For example, a Coring level of 5% means the higher modulus yarn is 5% longer than the lower modulus yarn. <i>Id.</i>; Ex. 1003, ¶91. ... Even though Fritsch describes a Coring level of 0.9% for a PEN/PET hybrid cord, a POSITA would have understood that the disclosed benefits would also apply to an aramid/nylon hybrid cord. Ex. 1003, ¶94. First, Fritsch itself contemplates an aramid/nylon hybrid cord as one of its inventive cords. Ex. 1011, cls. 8-9. Second, an aramid/nylon hybrid cord uses material with a higher modulus (aramid) and material with a lower modulus (nylon), which is similar to a PEN/PET hybrid cord, as Fritsch describes PEN as having a higher modulus and PET having a lower modulus. Ex. 1011, ¶¶20-21. Finally, Fritsch expressly teaches that cords using aramid and nylon are “[p]olymeric yarns useful in the inventive method and product,” and expressly states such cords preferably have a coring level between -25% and 25%. <i>Id.</i>, ¶29.	length of the higher modulus yarn relative to the lower modulus yarn. <i>Id.</i>, ¶¶19-20. For example[,] a Coring level of 5% means the higher modulus yarn is 5% longer than the lower modulus yarn. <i>Id.</i> ... 94. In my opinion, even though Fritsch describes a Coring level of 0.9% for a PEN/PET hybrid cord, a POSITA would have understood that the disclosed benefits would also apply to an aramid/nylon hybrid cord. First, Fritsch itself contemplates an aramid/nylon hybrid cord as one of its inventive cords. Fritsch at cls. 8-9. Second, an aramid/nylon hybrid cord uses material with a higher modulus (aramid) and material with a lower modulus (nylon), which is similar to a PEN/PET hybrid cord, as Fritsch describes PEN as having a higher modulus and PET having a lower modulus. Fritsch at ¶¶20-21. Third, Fritsch expressly teaches that cords using aramid and nylon are “[p]olymeric yarns useful in the inventive method and product” and expressly teachessuch [<i>sic</i>] cords preferably have a coring level between -25% and 25%. <i>Id.</i>, ¶29.
Petition 59-60.	Rust Decl. (Ex. 1003), ¶¶182-183.
To the extent Patent Owner argues that Fritsch does not expressly disclose an aramid-nylon tire cord with a Coring level of 0.9%, a POSITA would have	182. Alternatively, in my opinion, a POSITA would have also considered it obvious to apply Fritsch’s teaching of a 0.9% Coring level to the nylon-aramid

considered it obvious to apply Fritsch's teaching of a 0.9% Coring level to the nylon-aramid hybrid cord taught by Fritsch. Ex. 1003, ¶182. As discussed in Ground 1 and above, Fritsch discloses numerous benefits of having a positive Coring level, including a Coring level of 0.9%. See Section VIII.A.3. For example, a Coring level of 0.9% had a good balance of high Breaking Strength of 184 (second highest among the tested cords) and a relatively high Elongation at Break percentage of 12.8%. Ex. 1011, ¶40. For all the reasons mentioned there, a POSITA would similarly be motivated to apply this teaching to another embodiment in Fritsch. Ex. 1003, ¶182. A POSITA would also have a reasonable expectation of success in combining these teachings from the same reference. Ex. 1003, ¶183. Fritsch teaches that the Coring level of 0.9% is achievable by altering the tension of the ICBT direct cabling device, which is also used for the aramid-nylon embodiment. <i>Id.</i> Thus, a POSITA would have expected the combination to yield the predictable result of improving the physical properties of Fritsch's aramid-nylon tire cord. <i>Id.</i>	hybrid cord taught by Fritsch. As I discussed in Ground 1 and above, Fritsch discloses numerous benefits of having a positive Coring level, including a Coring level of 0.9%. See Section VII.A.1(iii). For example, a Coring level of 0.9% had a good balance of high Breaking Strength of 184 (second highest among the tested cords) and a relatively high Elongation at Break percentage of 12.8%, as well as other desirable physical properties. Fritsch at ¶40. For all the reasons I discussed in Ground 1, a POSITA would similarly be motivated to apply this teaching to another embodiment in Fritsch. 183. In my opinion, a POSITA would also have a reasonable expectation of success in combining these teachings from the same reference. Fritsch teaches that the Coring level of 0.9% is achievable by altering the tension of the ICBT direct cabling device, which is also used for the aramid-nylon embodiment. Thus, a POSITA would have expected the combination to yield the predictable result of improving the physical properties of Fritsch's aramid-nylon tire cord.
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Petitioner effectively seeks to rely on expert testimony that regurgitates its attorney arguments to supplement teachings missing from the references themselves. But as the Board's precedent holds, such testimony should be accorded (at most) "little weight" because it does nothing but "repeat[], *verbatim*, the conclusory

assertion[s] for which it is offered to support.” *Xerox*, IPR2022-00624, Paper 9 at 15-17 (precedential) (emphasis in original); *see also Upjohn Co. v. Mova Pharm. Corp.*, 225 F.3d 1306, 1311 (Fed. Cir. 2000) (“Lack of factual support for expert opinion going to factual determinations, however, may render the testimony of little probative value in a validity determination.”) (quoting *Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.*, 776 F.2d 281, 294 (Fed. Cir. 1985)); *Facebook, Inc. v. Windy City Innovations, LLC*, 973 F.3d 1321, 1340-41 (Fed. Cir. 2020) (affirming the Board’s decision upholding a claim as “the Board considered Facebook’s expert’s testimony but determined that it did not add materially to Petitioner’s unpersuasive attorney argument”). Further, Petitioner’s expert testimony is not “focused”—it does not “provide helpful context or ... explain terms of art”; rather, it simply duplicates the Petition and adds nothing, and thus supports that the Director should exercise discretion to deny the Petition. FAQ 21.

Additionally, even if the Petition’s deficient prior art analysis is found to meet the threshold for institution, conducting an IPR will not serve as a “true alternative” to validity challenges to the ’663 patent. *Motorola Sols. Inc. v. Stellar, LLC*, IPR2024-01205-08, Paper 19 at 3 (PTAB Mar. 28, 2025) (Director review). In particular, though the Petition does not acknowledge this, in the District Court litigation, Petitioner alleges that multiple claim terms in the ’663 patent are indefinite. *See* Ex. 2010, 10-11 (claimed length difference), 15-17 (claimed

limitation of “a predetermined length”) (*Kolon*, No. 8:24-cv-00415, Dkt. 133). These terms include those which, as Patent Owner will show in its forthcoming Preliminary Response, are not found in Petitioner's unpatentability grounds, and include terms that were critical to the claims' allowance. The Board cannot resolve issues of indefiniteness; rather, the District Court would have to address these issues, which further supports denial so that all invalidity issues can be efficiently resolved in one forum, rather than piecemeal between here and the District Court. *See, e.g., Arthrex, Inc. v. MedShape, Inc.*, IPR2025-00053, Paper 11 at 14-15 (PTAB Apr. 25, 2025) (“In sum, for some of the Challenged Claims Petitioner identifies issues of indefiniteness in claim construction presented in the Parallel Proceeding that we cannot resolve in this proceeding.... This suggests that even if Petitioner has shown a reasonable likelihood of prevailing ... Petitioner's disputes as they relate to the Challenged Claims, as a whole, may be more efficiently addressed in the Parallel Proceeding.”); *Nokia of Am. Corp. v. Pegasus Wireless Innovation LLC*, IPR2025-00037, Paper 14 at 13 (PTAB Apr. 25, 2025) (noting that even a timely filed *Sotera* stipulation is not dispositive because the Board “agree[d] with Patent Owner that some issues will remain—the district court will still have to resolve various § 112 issues raised by the Petitioner”).

Given Petitioner's unreasonable delay in filing the Petition, the weakness of Petitioner's merits arguments—as shown by Petitioner's expert's parroting of

Petitioner's attorney arguments—and the District Court being a more efficient forum to resolve the invalidity issues Petitioner has raised, the Director should exercise discretion to deny institution under 35 U.S.C. § 314(a) and the *Fintiv* factors.

F. *Fintiv* Factor Summary

Based on the factors outlined above, a holistic view of the *Fintiv* factors supports denial of the petition under the Director's § 314(a) discretionary powers.

V. Other Considerations Support Discretionary Denial

The Process Memo further sets forth additional considerations in deciding whether to deny institution, including:

- Whether the PTAB or another forum has already adjudicated the validity or patentability of the challenged patent claims;
- Whether there have been changes in the law or new judicial precedent issued since issuance of the claims that may affect patentability;¹⁰
- The strength of the unpatentability challenge;
- The extent of the petition's reliance on expert testimony;
- Settled expectations of the parties, such as the length of time the claims have been in force;
- Compelling economic, public health, or national security interests; and
- Any other considerations bearing on the Director's discretion.

¹⁰ This factor does not apply as Patent Owner is unaware of any relevant changes in the law or new judicial precedent issued since the issuance of the claims.

Process Memo at 2-3. These considerations support denying the Petition here.

First, both “[t]he strength of the unpatentability challenge” and “[t]he extent of the petition’s reliance on expert testimony” favor denying the Petition. As discussed above, Petitioner weakly invites the Board to recycle the same ground covered during prosecution and relies extensively on an expert declaration that does nothing but parrot Petitioner’s attorney arguments. Additional failings of Petitioner’s unpatentability challenge will be discussed in the forthcoming Preliminary Response.

One striking failure of the Petition worth noting is Petitioner’s failure to provide accurate citations to one of its prior art references, Buchanan. Petitioner and Dr. Rust cite to paragraph numbers of Buchanan throughout the Petition and Declaration. *See, e.g.*, Pet. 13-14, 36-37; Ex.1003, ¶¶67, 112-113. But Buchanan (Ex. 1010) does not include paragraph numbers. Accordingly, Patent Owner’s Preliminary Response will address the teachings of Buchanan to the extent that Petitioner’s unclear arguments can be understood, but the Director and Board need not be so charitable to Petitioner: it is a requirement for the Petitioner, in the Petition, to identify “[h]ow the construed claim is unpatentable The petition must specify where each element of the claim is found in the prior art patents or printed publications relied upon.” 37 C.F.R. § 42.104(b)(4). Indeed, “[i]t is not the responsibility of the Board to develop undeveloped arguments hinted at in the

Petition.” *Cisco Sys., Inc. v. Portsmouth Network Corp.*, IPR2024-00954, Paper 12 at 17 (PTAB Apr. 11, 2025) (citing and quoting *United States v. Dunkel*, 927 F.2d 955, 956 (7th Cir. 1991) (“Judges are not like pigs, hunting for truffles buried in briefs.”); *DeSilva v. DiLeonardi*, 181 F.3d 865, 866-67 (7th Cir. 1999) (“A brief must make all arguments accessible to the judges, rather than ask them to play archaeologist with the record.”)). This additional consideration favors discretionary denial. And as discussed in Section IV.E, the Petition relies extensively on an expert declaration that does nothing but parrots the attorney arguments in the Petition. Both considerations favor denying the Petition.

Second, the “[s]ettled expectations of the parties” should not be disturbed because Petitioner has known about the ’663 patent at least since March 2018, through its own prosecution of patent applications related to hybrid tire cord, but did not file this Petition until February 2025, at the eve of its statutory filing deadline. *See iRhythm, Inc. v. Welch Allyn, Inc.*, IPR2025-00363, -00374, -00376-78, Paper 10 at 3 (PTAB June 6, 2025) (denying institution because “Petitioner’s awareness of Patent Owner’s applications and failure to seek early review of the patents favors denial and outweighs [other] considerations”). Petitioner was aware of the ’663 patent at least during its prosecution of both U.S. Patent Application No. 16/464,350 (“’350 application”) and PCT Application No. PCT/KR2017/013279, directed to hybrid tire cord and methods of manufacturing hybrid tire cord. *See, e.g.*, Ex. 2011

('350 application prosecution history), 103, 126-40. On March 6, 2018, during prosecution of the PCT application, Petitioner received an international search report from the Korean Intellectual Property Office that listed the '663 patent and its Korean counterpart. Ex. 2013 (PCT/KR2017/013279 international search report), 2 (annotated below).

INTERNATIONAL SEARCH REPORT Information on patent family members		International application No. PCT/KR2017/013279	
Patent document cited in search report	Publication date	Patent family member	Publication date
JP 2007-030868 A	08/02/2007	BR P10602659 A	13/03/2007
		CN 1900399 A	24/01/2007
		EP 1745945 A2	24/01/2007
		EP 1745945 A3	05/11/2008
		KR 10-1286911 B1	16/07/2013
		US 2007-0017620 A1	25/01/2007
		US 7721780 B2	25/05/2010
KR 10-2012-0131449 A	05/12/2012	KR 10-1272692 B1	10/06/2013
KR 10-1602605 B1	21/03/2016	CN 106283307 A	04/01/2017
		EP 3112185 A1	04/01/2017
		JP 2017-014678 A	19/01/2017
		JP 6099798 B2	22/03/2017
		US 2016-0376733 A1	29/12/2016
		US 2017-0106698 A1	20/04/2017
		US 9617663 B2	11/04/2017
		WO 2017-003169 A1	05/01/2017

Thus, Petitioner knew of the '663 patent at least as of March 6, 2018. On May 30, 2019, Petitioner disclosed the '663 patent and its Korean counterpart patent KR 10-1602605 during prosecution of the '350 application. Ex. 2011, 103, 126-40.

Petitioner's detailed knowledge of Patent Owner's '663 patent is demonstrated by the detailed discussion of the '663 patent in prosecuting its own patent application. In March 2022, the examiner rejected Petitioner's pending claims in the '350 patent application based on the '663 patent. Ex. 2011, 66-69. In

June 2022, Petitioner specifically addressed the '663 patent in traversing the rejection. *Id.*, 55-63. In September 2022, the examiner rejected the claims again based in part on the '663 patent. *Id.*, 41-47. After Petitioner unsuccessfully argued against the examiner's rejection in November 2022 (*id.*, 30-38), Petitioner interviewed the examiner and was told that its amendment "would not overcome the art of record" and the examiner again rejected the claims based on the '663 patent (*id.*, 9-16). Petitioner abandoned the application. *Id.*, 1-2.

Furthermore, in February 2021, Patent Owner sent Petitioner a letter informing Petitioner of the '663 patent and other patents owned by Patent Owner, warning Petitioner against manufacturing hybrid tire cord in a manner that would infringe Patent Owner's patent rights. Exs. 2014 (original), 2015 (translation). Yet despite Petitioner's long awareness of the '663 patent and Petitioner's decision to proceed with manufacturing infringing hybrid tire cord, Petitioner did not file the Petition against the '663 patent until February 27, 2025—over four years after Patent Owner's letter, and almost seven years after Petitioner became aware of the '663 patent during its patent prosecution. Patent Owner's settled expectation that Petitioner would take no further action relative to the '663 patent long after being informed of the '663 patent should be maintained.

Third, "[c]ompelling economic ... interests" favor denying the Petition. As recognized during the District Court litigation, "[Patent Owner] and [Petitioner] are

direct competitors” in the emerging market for two-ply aramid and nylon hybrid tire cord. Ex. 2002, 6-7 (*Kolon*, No. 8:24-cv-00415, Dkt. 149). Petitioner manufactures and markets an infringing product aimed directly at the same customers Patent Owner serves, and as noted above, Petitioner has known that its conduct infringes Patent Owner’s intellectual property rights for years. Granting the Petition will 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. Thus, economic interests support denying the Petition.

Thus, additional considerations outlined in the Process Memo support denial of the Petition.

VI. Conclusion

For the foregoing reasons, Patent Owner respectfully requests that the Director exercise discretionary powers and decline to institute *inter partes* review of the '663 patent.

Respectfully submitted,

Dated: June 16, 2025

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CERTIFICATE OF COMPLIANCE WITH 37 C.F.R. § 42.24

I hereby certify that this Patent Owner's Brief on Discretionary Denial complies with the word count limitation of 37 C.F.R. § 42.24 because the Patent Owner's Brief on Discretionary Denial contains 9,909 words using Microsoft Word's counting feature, excluding the cover page, signature block, and the parts of the Patent Owner's Brief on Discretionary Denial exempted by 37 C.F.R. § 42.24.

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CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. § 42.6(e), I certify that on this 16th day of June, 2025, a true and correct copy of the foregoing **Patent Owner's Brief on Discretionary Denial and all Exhibits** were served by electronic mail on Petitioner's lead and backup counsel at the following email addresses:

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