UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CAPTION HEALTH, INC.,

Petitioner,

v.

UNIVERSITY OF BRITISH COLUMBIA,

Patent Owner.

IPR2025-01066

Patent No. 11,129,591

PATENT OWNER'S BRIEF FOR DISCRETIONARY DENIAL

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2003	Defendants' First Amended Invalidity Contentions Cover Pleading, dated August 22, 2025
2004	Defendants' Notice of Motion and Motion to Stay Case Pending *Inter Partes* Review, dated June 27, 2025, ECF No. 72
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2012	Defendant Caption Health's Responses to UBC's Third Set of Requests for Production to Defendant Caption Health (Nos. 30-54), dated May 27, 2025

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2013	UBC's Objections and Responses to Defendants' Second Set of Requests for Production of Documents and Things (Nos. 64-113), dated April 21, 2025
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2019	UBC's list of claim terms, dated April 11, 2025
2020	Defendants' Amended and Supplemented Proposed Claim Terms from U.S. Patent No. 11,129,591 for Construction Pursuant to L.R. 4-1, dated April 11, 2025
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I. INTRODUCTION

Patent Owner, University of British Columbia ("UBC" or "Patent Owner"), respectfully requests that the Director exercise her discretion to deny institution of an *inter partes* review ("IPR") proceeding of U.S. Patent No. 11,129,591 (the "'591 Patent") brought by Caption Health, Inc. ("Caption Health" or "Petitioner").

The '591 Patent was the result of years of research at UBC, requiring millions of dollars in funding, and that patent was designed to address the longstanding challenge that echocardiograph operators need years of specialized training to capture echocardiographic images properly and assess them. Slight changes in where an ultrasound transducer is placed, or the pressure applied when using the transducer, can result in significant variation in the quality and usability of an image. In most cases, the naked eye cannot ascertain the actual quality and usability of the image. Given the inability to discern the image quality, operators often send inadequate or unusable images to the lab, only to learn later that the procedure must be repeated. As a result, effective echocardiographic analysis can often be significantly delayed, which can delay proper treatment.

The '591 Patent ameliorated these problems through the specifically claimed features of its neural network architecture that allow more accurate quality analysis, reducing the need for operators to retake patients' echocardiographic images and for doctors to review captured images multiple times. The '591 Patent thus improves

the usability and ease of use of echocardiographic image analysis systems and allows such systems to be more accessible to a broader user base.

Petitioner's unpatentability challenges to this important invention are flawed in numerous ways that support discretionary denial. First, Petitioner's unpatentability challenges have weak merits, which do not adequately address the limitations of the independent claims or provide a sufficient motivation to combine. Instead, Petitioner relies on supposition about how the references' teachings *could* be modified to meet certain limitations and conclusory expert testimony in an attempt to improperly fill the gaps. This alone weighs in favor of discretionary denial.

Second, Petitioner's actions and the progress of the co-pending litigation show that the district court is the more efficient forum to resolve invalidity. Notably, Petitioner's lack of diligence and decision to bring staggered challenges to the two patents (the '591 Patent and U.S. Patent No. 10,751,029 (the "'029 Patent, Ex2001)) asserted in co-pending litigation creates inefficiency in both forums. Petitioner's staggered challenges are particularly troubling because Petitioner challenges the two patents with overlapping art but has provided a stipulation only as to the '591 Patent. The Director should not countenance such gamesmanship, and should instead find that Petitioner's actions here make the district court the best forum to decide

invalidity as to both patents. Indeed, in large part due to problems of Petitioner's own making, the balance of the *Fintiv* factors weighs heavily in favor of denial.

Third, the Director should discretionarily deny institution under 35 U.S.C. §325(d). Both parts of the *Advanced Bionics* framework are met because the Office considered the same and substantially the same art and arguments during prosecution and did not err in doing so. Importantly, the Examiner applied Krishnan (Ex1005) in a rejection, but Petitioner here recycles that art as Petitioner's *only* primary reference. Although Petitioner tries to distinguish its reliance on that reference by adding Lee (Ex1006) as a secondary reference, Petitioner does so only by glossing over explicit claim requirements that the Examiner found were not taught in the closest prior art (and are not taught by Petitioner's proposed combination either).

Finally, UBC's settled expectations favor denial because Petitioner had *years* of notice as to the '591 Patent and UBC's contention that Petitioner infringed it. The '591 Patent has been in force for 4 years, but that is more than enough for discretionary denial given the circumstances here. Specifically, Petitioner and its RPI cited UBC's published patent application multiple times starting more than 6 years ago. And when UBC provided specifics of Petitioner's infringement, including a claim chart, instead of respecting UBC's patent rights or at least engaging in a discussion, Petitioner went dark and expanded its infringing activity, forcing UBC to expend resources filing suit. Given this behavior, allowing an IPR

here would undermine the Office's efforts to encourage early challenges to validity when, as here, Petitioner had ample opportunity and notice to bring such a challenge.

In light of the numerous discretionary issues here, referring this IPR to a merits panel would be an inefficient use of the Board's resources, and thus the Petition should be discretionarily denied.

II. BACKGROUND

On May 28, 2024, UBC sued Caption Health and GE Healthcare Technologies, Inc. ("GE Healthcare") for patent infringement in the Northern District of California. Ex1019. The parties' communications regarding Caption Health's infringement of the '591 Patent, however, began years earlier, and those discussions culminated in UBC providing a claim chart to Caption Health in November 2022. After receiving that claim chart, Caption Health went silent and then was acquired shortly thereafter by GE Healthcare. Rather than respecting UBC's patent rights following that acquisition, Caption Health expanded its infringing products, forcing UBC to file suit in May 2024. On December 20, 2024, UBC filed an amended complaint, adding the '029 Patent to the co-pending litigation. Ex2002.

Caption Health waited an entire year (until May 2025) after the original district court complaint to file its IPR petition challenging the '591 Patent. There

was no reason for Caption Health's delay because its IPR is based primarily on prior art cited on the face of the patent and applied by the Examiner during prosecution.

Caption Health also could have filed an IPR challenging the '029 Patent at around the same time, which was 5 months after that patent had been asserted, but Caption Health chose not to. Instead, Caption Health waited almost 8 months to file its '029 IPR after that patent was asserted and almost 3 months after Caption Health had filed its '591 IPR. Notably, Caption Health's '029 Petition relies on the same primary reference as its '591 Petition and that primary reference is cited on the face of both patents. The overlapping art for the two IPRs is unsurprising because the claims of the '591 Patent and the '029 Patent have certain overlapping claim elements. For example, claim 1 of both patents recites "receiv[ing] signals representing...[ultrasound/echocardiographic] image[s]," determining a "quality assessment value," and "produc[ing] signals representing [a] quality assessment value...for causing [the] quality assessment value...to be associated with the...[ultrasound/echocardiographic] image[s]." Ex1001, claim 1; Ex2001, claim 1.

III. THE PETITION'S WEAK MERITS SUPPORT DISCRETIONARY DENIAL

This is not an IPR where Petitioner sets forth clear unpatentability grounds calling into question the Office's issuance of the challenged patent. Instead, Petitioner's grounds recycle art the Office already considered, and that recycled art leaves gaps, not covering certain claim limitations. Further, Petitioner has not shown

a motivation to combine the references. As discussed below (and in more detail in the forthcoming Patent Owner Preliminary Response ("POPR")), conducting a full trial on (or even requiring a merits panel to assess institution of) a Petition with such gross deficiencies would not be a good use of the Office's resources, particularly where, as here, the Petition fails to comply with 37 C.F.R. §42.104(b)(4). Thus, the Director should discretionarily deny institution based on the Petition's weak merits.

For all independent claims, the Petition relies on a combination of Krishnan (Ex1005) and Lee (Ex1006). Pet. 11. During prosecution, the Examiner applied Krishnan in a rejection (Ex1004, 207-19), and the Applicant amended the claims to add limitations, including [1(i)]-[1(n)] (*id.*, 255-56). In the reasons for allowance, the Examiner correctly found that Krishnan does not teach these limitations. *Id.*, 279-80. As discussed below, Petitioner's addition of Lee does not remedy these deficiencies because neither reference discloses the use of view-category-specific

neural networks as recited in limitations [1(i)/(l)][1] and because Petitioner has failed to show that a POSITA would have been motivated to combine Krishnan and Lee.[2]

A. Krishnan and Lee, Alone or in Combination, Do Not Teach All Limitations of the Challenged Claims

37 C.F.R. §42.104(b)(4) requires that a petition "specify where each element of the claim is found in the prior art patents or printed publications relied upon." Here, the Petition relies on disclosures that do not add up to the claim limitations, and supposition about how a POSITA *could* combine those disclosures and modify them to reach the limitations. Such gap-filling does not meet the requirements of §42.104(b)(4).

Krishnan and Lee describe technologies in contrasting fields and applications. Krishnan is directed to medical imaging and describes "systems and methods for processing a medical image to automatically identify the anatomy and view (or pose) from the medical image and automatically assess the diagnostic quality of the

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[1] Petitioner relies on the same analysis for the corresponding limitations of the other independent claims, claims 11 (Pet. 55-56) and 15 (*id*., 43-44). Thus, the deficiencies with claim 1 apply to all challenged claims.

[2] Patent Owner reserves the right to include other arguments regarding the merits in its POPR, and those arguments further support the weakness of the unpatentability challenges in the Petition.

medical image." Ex1005, [0002]. Krishnan describes that its systems can be used for processing cardiac ultrasound images, such that the "view" of an image is a standard ultrasound view of the heart (e.g., apical two-chamber view (A2C), apical four-chamber view (A4C), etc.). *See id*., [0019].

On the other hand, Lee is focused on determining a scene category (e.g., "mountain, ocean, sky, beach, streets, night view," etc.) of an image taken with a mobile phone and the quality of the image based on that scene category and other image quality factors (e.g., "sharpness, noise, contrast, color accuracy, distortion," etc.). *See* Ex1006, [0152], [0154], [0204]-[0206] (explaining that image quality factors making a night view image versus a sky image high quality are different), Figs. 12A-12B. Given its disparate teachings, Lee does not resolve Krishnan's deficiencies the Examiner correctly identified during prosecution.

First, Petitioner has not shown that Krishnan and Lee, alone or in combination, teach limitations [1(i)/(l)]. *See* Pet. 33-37. For these limitations, it is unclear what Petitioner's proposed combination is, and thus the Petition violates §42.104(b)(4).

As to Krishnan, the Petition states that it teaches "determining echocardiographic image quality assessment values using view-category-specific templates." Pet. 33 (citing Ex1005, [0041]). Krishnan's Paragraph 41, however, describes its Figure 4 embodiment, and although Petitioner points to Krishnan, Paragraph 35, to argue that Figures 4 and 5 can be alternatives (*id.*), Petitioner never

explains how Figure 4, as one alternative, meets any limitation of claim 1. *See id.*, 33-37. Indeed, Figure 4 discusses formulating a query using extracted feature data and searching templates created from known cases to determine a view and quality. Ex1005, [0041], Fig. 4. Petitioner does not explain how Krishnan's template comparison relates to neural networks at all, much less teaches "each of the sets of assessment parameters being a set of neural network parameters that define a neural network having a plurality of layers including an input layer configured to receive one or more echocardiographic images and an output layer configured to output one or more quality assessment," as recited in [1(i)].

Petitioner next points to Krishnan's "bank of classifiers" in its Figure 5 embodiment. Pet. 33 (citing Ex1005, [0042]-[0043]). Petitioner argues that Krishnan's classifiers can be implemented using machine learning methods including neural networks. *Id.* (citing Ex1005, [0006], [0023], [0042]-[0044]). Petitioner also cites the testimony of its expert, Dr. Deo. But in the cited testimony, Dr. Deo either provides an overview of Krishnan without analysis of how the cited disclosures meet any particular claim limitations (*id.* (citing Ex1002, ¶¶71-77)), or—in the context of [1(i)]—simply quotes the same portions of Krishnan cited in the Petition without further explanation (*id.* (citing Ex1002, ¶115)).

As to Lee, Petitioner argues it teaches determining a classifier to use based on the category of the image. Pet. 32-33. Petitioner never asserts that Lee teaches its

classifiers for determining image quality are neural networks, and indeed Lee does not. *See id.*, 36 (relying on Krishnan for a classifier based on a neural network). Instead, Petitioner concludes that "Lee discloses, as claimed in the Patent, that each of a plurality of image view categories is associated with a respective set of assessment parameters." *Id.*, 33 (citing Ex1002, ¶¶78-82, 116).

Thus, Petitioner clearly concedes that neither Krishnan nor Lee teaches [1(i)]. Instead, Petitioner and its expert speculate about what the combination of teachings from Krishnan and Lee "could" teach. Pet. 33 ("A POSITA would understand from these combined disclosures that Krishnan's 'bank of classifiers' *could* be a plurality of view-category-specific quality assessment classifiers as taught by Lee.") (emphasis added) (citing Ex1002, ¶¶113-14, 119-20); *id.* ("these view-category-specific classifiers *could* each be neural networks instead of view-category-specific templates") (emphasis added) (citing Ex1002, ¶119). Put simply, Petitioner says the combination of teachings from Krishnan and Lee *could* meet [1(i)] if gaps were filled, but Petitioner has not provided supporting evidence entitled to any weight that shows a reasonable likelihood of filling those gaps. Accordingly, the petition's weak merits support discretionary denial.

B. Petitioner Has Not Adequately Shown Motivation to Combine Krishnan and Lee

Because Petitioner's mappings to the references leave gaping holes, the Director need not consider other deficiencies to find weak merits favor denial here.

Nevertheless, as another example, Petitioner's motivation to combine Krishnan and Lee is deficient. Specifically, the Petition states "[a] POSITA would have found it obvious, and been motivated, to implement Krishnan using multiple view-category-specific neural networks based on the express teachings in Lee." Pet. 35. As support, Petitioner then relies on (1) general knowledge of neural networks used for image quality assessments, (2) Krishnan's template and classifier embodiments discussed above, and (3) Lee's alleged teaching of assessing image quality of different categories using different assessment parameters. *Id*., 34-36. From this, Petitioner concludes: "When this teaching is applied to Krishnan—particularly the embodiment in which Krishnan's quality assessment classifier is based on a neural network—a POSITA would have been motivated to use respective view-specific neural networks to assess the quality of echocardiographic images in the respective view categories." *Id.*, 36 (citing Ex1002, ¶125). Petitioner's cited expert testimony merely repeats this conclusion, and any additional explanation is based on alleged "common sense" without objective support. *See* Ex1002, ¶125. But Lee does not discuss any of this, instead mentioning medical imaging devices in a laundry list of possible applications, which also include a navigation device for a ship and a light bulb. Ex1006, [0038]. Lee never discusses how its teachings apply to "[i]mages in different categories" with "only a partially overlapping set of anatomic structures," as Dr. Deo admits would be necessary for the proposed Krishnan-Lee combination

(Ex1002, ¶125). Instead, Lee's disclosure focuses on determining the scene category for an image taken with a mobile phone, such as mountain, ocean, sky, night, etc. *E.g.*, Ex1006, [0152], [0153] (explaining that a night view image may have good quality even though the image has low brightness and low exposure and that a cloud image may have good quality even though the image has a low blur factor score), Figs. 12A-12B. Dr. Deo does not explain how such teachings in Lee would be applied to Krishnan such that "image quality would depend on which structures in the image are required for successful analysis." *See* Ex1002, ¶125.

Because of this, neither Petitioner nor Dr. Deo explain *why* a POSITA would have been motivated to combine the references "to use respective view-specific neural networks to assess the quality of echocardiographic images in the respective view categories." *See* Pet. 36. In addition, neither Petitioner nor Dr. Deo addresses these gaps when arguing a POSITA would have had a reasonable expectation of success. *See id*., Ex1002, ¶121. Thus, the Petition fails to provide sufficient evidence regarding a POSITA's alleged motivation to combine and a reasonable expectation of success as required. *See E-One, Inc. v. Oshkosh Corp.*, IPR2019-00162, Paper 16, 17-20 (June 5, 2019) (finding merits arguments "weak and speculative" and in favor of discretionary denial where Petitioner's obviousness arguments failed to explain how a skilled artisan would have been motivated to and able to modify the references).

The Petition further provides that, alternatively, it would have been obvious to a POSITA to combine Krishnan and Lee because the combination would "merely amount to applying known work from the field of automatic image processing (Lee) to an echocardiographic image use case (Krishnan) to yield predictable results." *See* Pet. 37. The Petition, however, provides no explanation of how it would have been within the ordinary skill and knowledge of a POSITA to successfully implement a plurality of view-category-specific neural networks based on the references' teachings. *See id*. For example, the Petition provides no evidence of the alleged predictable nature of the resulting view-category-specific neural networks—the Petition acknowledges that neither Krishnan nor Lee discloses view-category-specific neural networks as described above, and fails to cite any other material showing such disclosure. Petitioner has not shown applying Lee's teachings to an echocardiographic image use case, as taught in Krishnan, would lead to predictable results (or that such results would teach [1(i)/(l)]). Accordingly, the Petition fails to provide sufficient evidence as to motivation to combine.

C. The Petition Improperly Relies on Conclusory Expert Testimony

The Acting Director's memorandum identifies "[t]he extent of the petition's reliance on expert testimony" as a relevant discretionary consideration. *See* Acting Director's March 26, 2025 memorandum regarding "Interim Processes for PTAB Workload Management." Here, the Petition's heavy reliance on expert testimony

for material limitations reinforces the weaknesses of the Petition's positions and favors discretionary denial. *See iRhythm Techs., Inc. v. Welch Allyn, Inc.*, IPR2025-00363 et al., Paper 10, 2 (June 6, 2025) (suggesting that a petitioner "using its expert to fill gaps in the prior art" may support discretionary denial).

The Petition relies heavily on expert testimony as to limitations [1(i)/(l)] for a POSITA's alleged knowledge that view-category-specific classifiers of the Krishnan-Lee combination would have had different assessment parameters for analyzing different view categories. Pet. 34. In fact, the Petition provides no specific citations for this claimed feature because neither Krishnan nor Lee disclose it, as described above in §III.AIII.A, and instead improperly relies on unsupported expert testimony to fill the gap. *See* Pet. 34. Regardless, the cited expert testimony does not address the differences between view-specific assessment parameters as recited and the assessment parameters of the Krishnan-Lee combination; instead, the expert simply repeats arguments from the Petition. *See* Ex1002, ¶120. This repetition of arguments without further explanation is not entitled to weight. *See Xerox Corp. v. Bytemark, Inc.*, IPR2022-00624, Paper 12, 2, 5 (Feb. 10, 2023) ("Board was correct in giving little weight to Petitioner's expert because the expert declaration merely offered conclusory assertions…and repeated, *verbatim*, Petitioner's conclusory arguments."); *see also DSS Tech. Mgmt., Inc. v. Apple Inc.*, 885 F.3d 1367, 1374-75 (Fed. Cir. 2018) (holding as inadequate the petitioner's

reliance on expert testimony that was "conclusory" and "unspecific" for a limitation that was not "unusually simple," related to technology that was "not 'particularly straightforward,'" and "play[ed] a major role in the subject matter claimed"); *Arendi S.A.R.L. v. Apple Inc.*, 832 F.3d 1355, 1366 (Fed. Cir. 2016) (finding that a missing claim limitation cannot be determined obvious based on "conclusory statements and unspecific expert testimony").

The Petition's reliance on conclusory expert testimony to fill gaps in the Petition's unpatentability grounds weighs heavily in favor of discretionary denial.

IV. THE DISTRICT COURT IS THE MOST EFFICIENT FORUM TO DECIDE INVALIDITY

A. Petitioner Failed to Act Diligently and Instead Filed Staggered Petitions

As discussed above, Caption Health's dilatory and piecemeal approach to its IPR filings supports discretionary denial. In particular, Caption Health waited a full year from UBC's complaint to file its Petition challenging the '591 Patent. And even though Caption Health was aware of the primary reference for its '029 Petition at that time, Caption Health waited almost 3 more months before filing that Petition.

In this proceeding (the '591 IPR), UBC's POPR and Caption Health's discretion opposition will be due on September 24; the Director's discretion decision will be expected by October 24; and if referred, the panel's institution decision would be expected by December 24, 2025. Because of Caption Health's decision to

stagger the proceedings, UBC will then need to file another discretion request in the '029 IPR by October 20; UBC's POPR and Caption Health's discretion opposition will be due on November 20; the Director's discretion decision will be expected by December 22; and if referred, the panel's institution decision would be expected by February 20, 2026.

Their staggered nature means these proceedings will be inefficient compared to district court. For example, Petitioner submits a declaration from the same technical expert (Dr. Rahul Deo) in both IPRs, but UBC will likely need to take his deposition four times in these IPRs at different times (twice as to his declarations submitted with the Petitions and twice as to his declarations submitted with Petitioner's Replies). This same duplication of effort will occur with UBC's expert. In contrast, in district court, expert discovery, including depositions, can occur concurrently as to both asserted patents. Likewise, the district court can substantively assess the parties' disputes for both patents together, rather than piecemeal, as Petitioner asks the Board to do here.

B. Petitioner's '591 *Sotera* Stipulation Is Not Meaningful Here

Petitioner filed a *Sotera*[3] stipulation in this proceeding over a month after its initial petition. *See* Paper 6 (If the IPR is instituted, then Petitioner will not pursue "the specific grounds asserted in the Petition (Paper 1) or any ground that was raised or reasonably could have been raised in *inter partes* review" with respect to the '591 Patent.). However, the *Sotera* stipulation fails to eliminate the overlap of issues between the IPR proceedings and the co-pending litigation.

As an initial matter, the stipulation does not bind all real parties-in-interest and thus does not prevent the district court from considering the same prior art and arguments. Specifically, Petitioner has identified its parent company and defendant in the Litigation, GE Healthcare as a real party-in-interest. Pet. 4. GE Healthcare, however, has not agreed to be bound by the stipulation. Thus, GE Healthcare could attempt to sidestep the stipulation and pursue the same grounds from the IPR in the co-pending litigation. For this reason, Petitioner's *Sotera* stipulation does not meaningfully eliminate overlap.

In addition, the district court will need to address invalidity even if the '591 *Sotera* stipulation were to apply to both Petitioner and GE Healthcare. Specifically,

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[3] *Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019, Paper 12 (Dec. 1, 2020) (precedential as to §III.A).

that stipulation fails to address system art, and Petitioner and GE Healthcare could choose to pursue such art in the district court litigation. *See Motorola Sols., Inc., v. Stellar, LLC*, IPR2024-01205, Paper 19, 3-4 (Mar. 28, 2025) (finding that a *Sotera* stipulation was unlikely to moot the petitioner's combination of IPR art with unpublished system prior art in district court proceedings, and therefore could not outweigh other factors favoring denial); *see also Shenzen Tuozhu Tech. Co. v. Stratasys, Inc.*, IPR2025-00354, Paper 11, 2 (June 12, 2025) (finding that *Sotera* stipulation would not moot combinations pursued in district court involving unpublished system prior art).

Further, Petitioner's '591 stipulation addresses only unpatentability grounds as to that patent without addressing overlap caused by Petitioner continuing to rely on overlapping references to challenge the '029 Patent's validity in district court. Petitioner apparently intends such overlap to continue because when it filed its '029 Petition on August 15, 2025, Petitioner chose not to file any stipulation with that Petition. In other words, despite having the opportunity to do so, Petitioner did not file its '029 stipulation "as soon as practicable, so that the patent owner may address the impact of the stipulation in its discretionary denial brief."[4] Because of this and

[4] Interim Director Discretionary Process, §I.D., available at https://www.uspto.gov/patents/ptab/interim-director-discretionary-process.

because Petitioner chose to stagger the filing of its Petitions, Petitioner's '591 stipulation will not materially reduce overlap between the proceedings. Specifically, even if Petitioner were to now offer a *Sotera* stipulation for the '029 Patent,[5] issues as to the Krishnan reference will remain in the district court at least during the gap in time between the due dates for institution between the '591 and '029 IPRs.

Finally, the Amended Invalidity Contentions in the co-pending litigation raise §101 and §112 challenges, requiring the district court to assess validity challenges for claims at issue in this IPR. Ex2003, 23-24.

In sum, Petitioner's '591 *Sotera* stipulation does not reduce meaningful overlap here, and the district court is the most efficient forum to consider invalidity of the '591 and '029 Patents. In other words, Petitioner's *Sotera* stipulation "does not ensure that these IPR proceedings would be a 'true alternative' to the district court proceedings." *Motorola Sols., Inc.*, Paper 19, 3-4.

C. The *Fintiv* Factors Also Show the District Court Is the Most Efficient Forum to Decide the Parties' Invalidity Disputes

The six factors from *Apple Inc. v. Fintiv Inc.*, IPR2020-00019, Paper 11 (Mar. 20, 2020) (precedential) are: (1) whether the district court granted a stay or evidence exists that one may be granted if a proceeding is instituted; (2) proximity of the

[5] The Director should not consider that stipulation for purposes of discretion here because Petitioner did not provide it "as soon as practicable."

court's trial date to the Board's projected statutory deadline for a final written decision; (3) investment in the parallel proceeding by the district court and the parties; (4) overlap between issues raised in the petition and in the parallel proceeding; (5) whether the petitioner and the defendant in the parallel proceeding are the same party; and (6) other circumstances that impact the Board's exercise of discretion, including the merits. *Id*.

All of the *Fintiv* factors favor denial, as explained below.

1. Factor 1: The Chance of a Stay in the District Court Proceeding Is Unlikely

The co-pending litigation is not stayed, and a future stay is unlikely. In deciding whether to grant a stay pending an IPR, courts in the Northern District of California weigh and balance (1) the stage of the litigation, (2) whether a stay will simplify the issues in question and trial of the case, and (3) whether a stay would unduly prejudice or present a clear tactical disadvantage to the non-moving party. *Finjan, Inc. v. Symantec Corp.*, 139 F. Supp. 3d 1032, 1035 (N.D. Cal. 2015) (quoting *Evolutionary Intelligence, LLC v. Facebook, Inc.*, No. 13-cv-04202-SI, 2014 WL 261837, at *1 (N.D. Cal. Jan. 23, 2014)); *LELO, Inc. v. Standard Innovation (US) Corp.*, No. 13-cv-01393-JD, 2014 WL 2879851, at *2 (N.D. Cal. June 24, 2014).

Defendants already filed a Motion to Stay Case Pending *Inter Partes Review* in the co-pending litigation (Ex2004), but Judge Lee denied it without prejudice

(Ex2005). Specifically, Judge Lee explained that the second factor, the potential for simplification of the case, weighed against a stay:

> In theory, a stay could simplify the litigation in three ways. But at this stage, these benefits are speculative. First, the PTAB may invalidate some of Plaintiff's patent claims, which would eliminate the need for this Court to resolve infringement of those claims. Second, the IPR proceedings "could clarify the scope and interpretation of the asserted claims." *Anza Tech., Inc. v. Toshiba Am. Elec. Components Inc.*, No. 17-cv-07289-LHK, 2018 WL 4859167, at *2 (N.D. Cal. Sept. 28, 2018). Third, the IPR proceedings could constrain the invalidity arguments that Defendants may raise in this case. 35 U.S.C. § 315(e)(2). ***But the Court cannot assume that any of these benefits will manifest here because the PTAB has not yet instituted IPR on either patent. Indeed, Defendants have only filed an IPR petition as to one of two patents asserted here.*** With respect to the already-filed IPR petition, the PTAB is not expected to make an institution decision until late December 2025. *See* 35 U.S.C. § 314(b). And because Defendants have not yet filed the second IPR petition, a stay pending the PTAB's institution decisions would not be efficient in this case. Accordingly, this factor weighs against a stay.

Id., 2-3 (emphasis added). In other words, Judge Lee found that having no instituted IPRs for both patents asserted in the co-pending litigation weighs against a stay. Under this reasoning, it is unlikely that Judge Lee would stay the case pending this IPR because the PTAB is not expected to make an institution decision regarding the

’591 IPR until late December 2025 and the Petition against the ’029 Patent was not filed until August 15, 2025.[6] Any institution decision regarding the Petition for the ’029 Patent would not be until late February 2026, by which point all claim construction briefing will be complete and the *Markman* tutorial will be imminent in district court, so the parties will have invested even more resources in the co-pending litigation. *See* §IV.C.3IV.C.3. Thus, this factor weighs in favor of denial.

2. Factor 2: The Projected Trial Date and Final Written Decision Deadline Are in Close Proximity

No scheduling order has been issued setting the trial date in the co-pending litigation. The projected deadline for the Final Written Decision for this IPR is on December 24, 2026. In addition, the projected Final Written Decision for the ’029 IPR is not until late February 2027.

On the other hand, the median time-to-trial for patent litigation cases in the Northern District of California is 2 years and 7.8 months according to data from Docket Navigator, which would place the estimated trial date for the litigation in late December 2026. Ex2006. Discretionary denial is appropriate when, like here, the projected trial date and Final Written Decision deadline fall around the same time in order to reduce the inefficiencies of maintaining parallel proceedings. *See Shenzen Tuozhu Tech. Co., Ltd.*, Paper 11, 2 (“Under the circumstances of this case, it will

[6] IPR2025-01422, Petition for *Inter Partes* Review of U.S. Patent No. 10,751,029.

be inefficient to maintain two parallel proceedings when the district court scheduled trial date and the projected final written decision due date are in close proximity. Exercising discretion to deny the petition in this case reduces the inefficiencies and burdens on the parties to maintain two parallel proceedings."); *see also Amazon.com, Inc. v. Kaifi LLC*, IPR2025-00624 et al., Paper 16, 2 (July 29, 2025) (exercising discretion to deny institution, noting that "the close proximity of a final written decision to the projected trial date (accounting for a 45 day delay) would result in the significant duplication of effort, additional expenses for the parties, and a risk of inconsistent decisions"). Because maintaining parallel proceedings would result in inefficiencies in light of the meaningful investments the parties have made in the co-pending litigation (*see* §IV.C.3IV.C.3), the proximity of the projected dates for trial in the co-pending litigation and the Final Written Decision in this IPR and the '029 IPR support discretionary denial.

3. Factor 3: The Parties and the Court Have Invested Substantial Resources in the District Court Case

The original complaint in the co-pending litigation was filed on May 28, 2024. Ex1019. Since that time, the parties have invested substantial resources in the case. Fact discovery opened on August 6, 2024, over one year ago. Ex2007. Since then, the parties have already exchanged mandatory disclosures under Local Patent Rules 3-1, 3-2, 3-3, and 3-4, including amended invalidity contentions and three sets of supplemental amended infringement contentions. Ex2003, Ex2008, ¶7, Ex2009,

Ex2010. Both parties have also invested a significant amount of time and resources serving and responding to written discovery requests, as well as searching for and producing multiple sets of documents including technical documents, sales data, and license agreements. *See, e.g.*, Ex2011; Ex2012; Ex2013. The parties have supplemented these discovery responses multiple times. Ex2008, ¶5. UBC has produced over 3,500 pages of documents and continues to produce more on a rolling basis. In addition to document production, UBC has retained two experts on the technical issues and on damages. *Id*. UBC's technical expert traveled to Petitioner's counsel's office in Cleveland, Ohio on January 27-28, 2025 to conduct a source code review. *Id*. UBC also currently plans to take depositions in the near future.

In addition, the parties have briefed and/or argued several motions in the co-pending litigation, including (1) a motion to strike UBC's doctrine of equivalents contentions (Ex2014), (2) a motion for leave to amend UBC's infringement contentions (Ex2015), (3) an administrative motion regarding the case schedule (Ex2016), and (4) a motion to stay the case pending *inter partes* review (Ex2004).

The Court considered and later granted UBC's motion for leave to amend its infringement contentions on July 2, 2025. Ex2017. Following the Court's grant, Defendants are required to respond to UBC's Third Set of Requests for Production and Interrogatory No. 9, which concern subject matter added in the amendments. Ex2018 (terminating as moot defendants' joint discovery letter regarding timeliness

of Plaintiff's amended infringement contentions). Counsel for the parties also traveled to San Jose, California to argue at the hearing for the motion to stay on August 6, 2025, after which Judge Lee denied the motion to stay the co-pending litigation. Ex2005, Ex2018.

Further, the parties have made meaningful investments in claim construction, including exchanging or submitting mandatory disclosures under Patent Local Rules 4-1, 4-2, and 4-3. For example, the parties exchanged their respective lists of claim terms for construction on April 11, 2025 and their proposed constructions of those terms on May 2, 2025. Ex2019; Ex2020. The parties also drafted their Joint Claim Construction and Prehearing Statement and filed it on May 30, 2025. Ex2021. The current claim construction schedule was entered on August 13, 2025. Ex2022. Under it, all claim construction briefing will be completed by the projected institution decision date for this IPR on December 24, 2025, with the *Markman* tutorial and hearing to follow shortly afterwards on February 24 and March 5, respectively. *Id*.

By the time the institution decision for this IPR is due, the parties will have been actively litigating in district court for 19 months and will have already expended significant resources and time in the co-pending litigation. Institution would increase the workload on the parties and in turn duplicate the efforts of the Board and the District Court. The issues raised in the '591 Petition can be more

efficiently resolved in the co-pending litigation, and the parties' significant investment in the co-pending litigation favors discretionary denial.

4. Factor 4: Overlap in the District Court Would Continue Even if This IPR Is Instituted

As discussed in Section IV.AIV.A, Petitioner was not diligent in filing this IPR, and delayed in bringing the '029 IPR. In addition, the two IPRs involve overlapping art, but Petitioner has provided a stipulation only for the '591 IPR. Thus, overlap between this IPR and the co-pending district court proceeding will remain if this IPR is instituted, and this factor favors discretionary denial.

5. Factor 5: Caption Health Is Both the Petitioner Here and a Defendant in the Parallel Proceeding

Because Caption Health is the Petitioner here and a defendant in the parallel proceeding, this weighs in favor of discretionary denial. *See SAP Am., Inc. v. Cyandia, Inc.*, IPR2024-01496, Paper 13, 9 (Apr. 7, 2025) ("The fact that Petitioner is also the defendant in the Litigation weighs in favor of discretionarily denying institution."); *see also Apple Inc.*, Paper 15, 15 (May 13, 2020) ("Because the petitioner and the defendant in the parallel proceeding are the same party, this factor weighs in favor of discretionary denial.").

6. Factor 6: The Petition's Deficient Arguments on the Merits Favor Denial

The Petition suffers from numerous deficiencies, including gap-filling as to key limitations of all independent claims and failure to establish motivation to

combine or reasonable expectation of success. These deficiencies in the merits of the Petition are discussed in further detail at §III.

When the circumstances are weighed holistically here, the district court is the most efficient forum to address invalidity issues, and institution of this IPR should be discretionary denied.

V. THIS PETITION SHOULD BE DENIED UNDER SECTION 325(D) BECAUSE THE OFFICE ALREADY CONSIDERED THE PRIMARY REFERENCE AS WELL AS CUMULATIVE ART AND DID NOT ERR IN THAT CONSIDERATION

In evaluating discretionary denial under 35 U.S.C. §325(d), the Board applies a framework to determine (1) whether the same or substantially the same art or arguments were presented to the Office during the original prosecution; and (2) 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 Elektromedizinishe Geräte GMBH*, IPR2019-01469, Paper 6, 8, 10 (Feb. 13, 2020) (precedential).

To apply the framework above, the Board considers a number of factors including the cumulative nature of prior art references. *See Becton, Dickinson & Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8, 17-18 (Dec. 15, 2017) (precedential as to §III.C.5, first paragraph). The nonexclusive factors are:

(a) the similarities and material differences between the asserted art and the prior art involved during examination;

(b) the cumulative nature of the asserted art and the prior art evaluated during examination;

(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 or Patent Owner distinguishes 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.

Id. "[BD] factors (a), (b), and (d) relate to the first part of the *Advanced Bionics* framework (whether the same or substantially the same art or arguments previously were presented to the Office), and [BD] factors (c), (e), and (f) relate to the second part of that framework (previous Office error)." *Autel Intelligent Tech. Corp., Ltd., v. Orange Elec. Co.*, IPR2021-01545, Paper 8, 13 (Apr. 8, 2022). "If a condition in the first part of the framework is satisfied and the petitioner fails to make a showing of material error, the Director generally will exercise discretion not to institute inter partes review." *Advanced Bionics*, 8-9; *see also Ecto World, LLC v. RAI Strategic*

Holdings, Inc., IPR2024-01280, Paper 13, 4-6 (May 19, 2025) (precedential as to §A) (clarifying Petitioner's burden to show "material" error).

Part one of the *Advanced Bionics* framework is met here because the Petition relies on art that is the same or substantially the same as the art that was previously presented to the Office. With respect to part two, Petitioner has not demonstrated material error by the Office as required, and indeed, the Office did not err.

A. Prosecution History of the '591 Patent

During prosecution of the '591 Patent, the Examiner issued a single Non-Final Office Action on May 5, 2021. Ex1004, 207-19. In this Office Action, the Examiner rejected all claims as anticipated by Krishnan under §102. *Id*. In response, Applicant discussed why Krishnan did not disclose the claims and amended the independent claims to expedite the prosecution. *Id.*, 254-71. During the course of prosecution, Applicant also submitted references to the Office in Information Disclosure Statements ("IDSs"), which the Examiner considered. The Examiner then allowed the claims. *Id*., 274-81. The Examiner's reasons for allowance state that the prior art, "taken individually or in combination" does not teach or suggest the steps for determining a "[first/second] quality assessment value," including "determining that a [first/second] set of assessment parameters...is associated with the [first/second] view category" and "in response" to said determination, "inputting the [first/second]

at least one echocardiographic image into the neural network defined by the [first/second] set of assessment parameters." *Id*., 279-80.

B. The Petition Relies on References That Are the Same, or Substantially the Same, as Prior Art Previously Presented to the Office

The Petition relies on references that are the same or cumulative to references cited during prosecution of the patent application and thus provide no more disclosure than what was already considered and rejected by the Examiner. All grounds in the Petition for the independent claims rely on Krishnan as the primary reference and Lee as the secondary reference. Pet. 11. Because Krishnan is the same reference that the Examiner considered and applied in the Office Action during prosecution (Ex1004, 207-19), it was previously presented to the Office under the first step of *Advanced Bionics*. *See Helena Labs. Corp. v. Sebia*, IPR2024-00801, Paper 10, 12-13 (Oct. 23, 2024) (finding that a reference discussed and applied in the Office Action satisfied step one of the *Advanced Bionics* framework).

Additionally, although Lee was not presented to the Office during prosecution of the '591 Patent, it is cumulative of art considered by the Examiner because it substantially reiterates or provides no more than what was already taught by previously cited or considered prior art. *See Helena Labs. Corp.*, Paper 10, 13-15 (finding that a newly cited reference was cumulative to a reference already relied on during prosecution because the references disclosed the same teachings); *see also*

Parse Biosciences, Inc. v. 10X Genomics, Inc., IPR2023-01033, Paper 8, 14 (Dec. 19, 2023) (finding a reference cited in the Petition to be "cumulative of art that was before the Examiner" during prosecution because they both disclosed "isolating cell nuclei").

Specifically, Lee is substantially similar to U.S. Patent No. 8,712,157 (Ex2023, "Marchesotti"), which was cited in an IDS during prosecution of the '591 Patent and thus considered by the Examiner. Ex1004, 194. The Petition describes that "[a]fter first classifying an image as belonging to a particular category, Lee then determines which of a plurality of stored classifiers corresponds to that category and determines an image quality score using that classifier." Pet. 33. But because Lee does not describe any "classifier" for determining image quality that is a neural network or is part of a neural network, the Petition instead relies on Krishnan for its "quality assessment classifier [that] is based on a neural network" to allegedly show that "a POSITA would have been motivated to use respective view-specific neural networks to assess the quality of echocardiographic images in the respective view categories." *Id*., 36. The Petition further describes that "Lee expressly discloses a computer-implemented system having a processor configured to 'determine a classifier corresponding to the category of [an] image from among a plurality of classifiers." *Id*., 37.

Like Lee, Marchesotti discloses assigning a category to an image and then assessing the quality of an image using different classifiers per category of the image to output an image quality score. *See* Ex2023, 10:1-3, 15:40-54. Marchesotti describes that each of its classifiers has parameters that are estimated using only the images of the respective category. *See id*., 15:43-47. Both Lee and Marchesotti describe the image category as the type of content present in an image. *See, e.g.*, *id*., 4:26-32; Ex1006, [0096]. Further, like Lee, Marchesotti does not describe its classifiers for quality assessment as using neural networks. *See, e.g.*, Ex2023, 14:40-44.

Accordingly, because Krishnan was applied in a rejection during prosecution and Lee is cumulative to Marchesotti, which was cited in an IDS, the first step of the *Advanced Bionics* framework is met.

C. Petitioner Has Not Shown That the Office Erred Materially

Petitioner has the burden to show material error. *See Ecto World, LLC*, Paper 13, 4-6. Specifically, Petitioner must explain, with reference to *Becton Dickinson* factors (c), (e), and (f), how the Examiner erred in overlooking the prior art. *See id*., 5 (citing *Advanced Bionics*, Paper 6, 10). Because Petitioner has not addressed the *Becton Dickinson* factors and has failed to meet its burden with respect to material error, discretionary denial is appropriate. *See Advanced Bionics,* IPR2019-01469, Paper 6, 8-9 ("If a condition in the first part of the framework is satisfied and the

petitioner fails to make a showing of material error, the Director generally will exercise discretion not to institute inter partes review.").

If Petitioner attempts to address material error for the first time in its opposition to the Discretionary Denial Request, that argument should be rejected. Here, Petitioner knew §325(d) would be at issue because the Petition's *only* primary reference was applied in the *only* Office Action during prosecution of the '591 Patent. Thus, it was incumbent on Petitioner to address §325(d). To find otherwise would effectively render the recent decision in *Ecto World* meaningless.

Regardless of whether Petitioner should have addressed this issue in the Petition, the Examiner did not materially err. The Examiner discussed Krishnan during prosecution and allowed the claims following an amendment. The Examiner's allowance was not in material error at least because Krishnan does not disclose the use of view-category-specific neural networks as discussed above in §III.A.

Additionally, the Examiner appropriately considered Marchesotti, and did not err in allowing the claims because Marchesotti, like Lee, also fails to disclose the use of view-category-specific neural networks and combining it with Krishnan would not render obvious the claims. The Examiner therefore considered similar combinations of references and properly found the claims patentable. Thus,

Petitioner cannot carry its burden under the second step of the *Advanced Bionics* framework.

The §325(d) analysis above applies to all challenges in the Petition because every ground in the Petition relies on the Krishnan-Lee combination to teach limitations of the independent claims that the Examiner correctly found were not disclosed in the prior art. The Director should discretionarily deny institution under §325(d).

VI. PATENT OWNER'S "SETTLED EXPECTATIONS" FAVOR DENIAL

In considering discretion, the Director may address the "[s]ettled expectations of the parties, such as the length of time the claims have been in force." Acting Director's March 26, 2025 memorandum regarding "Interim Processes for PTAB Workload Management." Here, although the patent issued in 2021 and so the claims have been in force for approximately 4 years, the '591 Patent should have been issued much earlier, as reflected by the 500 days of patent term adjustment. Ex1001, Cover. Without that delay, the '591 Patent would have issued in May 2020.

In addition, the public in general and Caption Health in particular have been on notice of the '591 Patent for more than 6 years. The PCT application to which the '591 Patent claims priority was published on October 26, 2017, and the U.S. application that led to the '591 Patent was published on May 2, 2019. *See* Ex1001, code (87), (65). As discussed below, Petitioner and UBC began communicating

about the subject matter of the ’591 Patent in 2017, and GE Healthcare was aware of the published application as early as 2019 based on its citations to that application in its own patent applications. Thus, Petitioner had sufficient opportunity to evaluate and challenge the ’591 Patent years before it did. Based on Petitioner’s failure to do so, the Director should find UBC’s settled expectations weigh in favor of discretionary denial.

A. Petitioner Learned About the ’591 Patent Through Pre-Suit Communications

Petitioner and UBC had pre-suit communications related to the ’591 Patent. UBC and Petitioner have been in communication about the subject matter related to the ’591 Patent since 2017, while the PCT application to which the ’591 Patent claims priority was pending. As explained in the Amended Complaint in the co-pending litigation, the inventors of the ’591 Patent had a discussion with then Chief Technical Officer (CTO) of Bay Labs (now Petitioner Caption Health), Kilian Koepsell, in May 2017. *See* Ex2002, ¶25. During the meeting, the inventors and Mr. Koepsell discussed technical papers related to the invention claimed in the ’591 Patent and possible collaborations between the UBC and Bay Labs teams. *See id*., ¶¶26-27. Shortly after the meeting, at Mr. Koepsell’s request, inventor Robert Rohling emailed the technical papers that were discussed during the meeting. *See id*., ¶27; Ex2024; Ex2025; Ex2026.

After a Notice of Allowance[7] was issued for the '591 Patent in August 2021, inventor Purang Abolmaesumi reached out to Steve Cashman, Board Member of Caption Health, and Ha Hong, Chief Artificial Intelligence Officer at Caption Health, to discuss potential collaborations. *See* Ex2027; Ex2028. In the message to Mr. Hong, Mr. Abolmaesumi mentioned "two issued patents" "in the field of AI for Pocus." Ex2028.

On May 5, 2022, UBC's counsel sent a letter to Steve Cashman, then President and Chief Executive Officer of Caption Health, bringing the infringement of the '591 Patent to Caption Health's attention and offering discussions to resolve the matter without litigation. Ex2029. Caption Health did not respond to the letter. Having heard no response, UBC's counsel sent another letter to Mr. Cashman on May 24, 2022, attaching the original May 5, 2022, letter and requesting a response regarding the '591 Patent. Ex2030.

On June 13, 2022, Steve Cashman sent an email acknowledging receipt of the May 2022 letters and promising a prompt response following review of the letters. Ex2031. On June 27, 2022, Mr. Cashman sent another email alleging that the May 5 letter did not include enough information to engage in a productive discussion and asking for "more information…, such as detailed claim mapping and interpretation

[7] Ex1004, 274-81.

in relation to [Caption Health's] current products." *Id*. In response, UBC provided the requested information, including a claim chart, in a letter to Mr. Cashman on November 11, 2022, again requesting a further response from Caption Health. Ex2032. But Caption Health never responded to the November 11, 2022, letter and has not otherwise provided any substantive response to UBC. Instead, Caption Health expanded its infringement after being acquired by GE Healthcare.

B. Petitioner and Its RPI Knew About the '591 Patent Because the Application Leading to the '591 Patent Was Cited in Its Patents And Publications

Petitioner and its RPI knew about the '591 Patent—as far back as 2019—based on citations to the application leading to the '591 Patent in Petitioner's and its RPI's own patents and publications.

The application leading to the '591 Patent was published on May 2, 2019 as U.S. Patent Publication No. 2019/0125298 ('298 application). GE Healthcare—a defendant in the co-pending litigation and Petitioner's RPI (Pet. 4)—knew about the published application at least as early as August 29, 2019. Specifically, GE Healthcare is the parent company of GE Precision Healthcare LLC (*see* Ex2033, Ex2034), and seven of GE Precision Healthcare LLC's patent applications cited the '298 application during prosecution between August 2019 and December 2022. *See* Ex2035; Ex2036; Ex2037; Ex2038; Ex2039; Ex2040; Ex2041.

Less than 2 months later in February 2023, GE Healthcare acquired Caption Health for approximately $150 million. *See* Ex2042; Ex2043.

Following the acquisition, the '298 application was cited during prosecution of Caption Health's Application No. 17/061,578 on September 8, 2023. *See* Ex2044.

Based on the pre-suit communications and citations to the '298 application discussed above, Petitioner knew about the '591 Patent well before its issuance on September 28, 2021, and was notified several times again about the '591 Patent post-issuance before the co-pending litigation commenced in May 2024. Thus, Petitioner had ample time to prepare and challenge the validity of the '591 Patent and could have brought this IPR much earlier than May 28, 2025. UBC's settled expectations weigh in favor of discretionary denial.

VII. ECONOMIC AND PUBLIC HEALTH INTERESTS FAVOR DISCRETIONARY DENIAL

The Director also considers any "[c]ompelling economic, public health, or national security interests." Acting Director's March 26, 2025 memorandum regarding "Interim Processes for PTAB Workload Management." Here, there are compelling economic and public health interests in denying institution to avoid waste with respect to the economic and research investments made for the '591 Patent.

UBC is one of the top research universities in the world and has created numerous innovations that benefit society. UBC has invested over $890 million

(CAD) in research funding for thousands of research projects, including for medical health research like that of the '591 Patent. *See* Ex2045. Many of UBC's innovations have been acknowledged by patent offices throughout the world, including the United States Patent and Trademark Office. As is typical of university research projects, significant effort is placed into formulating research plans, drafting grants, and applying for grants to make research possible. Multiple grants are typically needed for research projects to allow research to continue for a meaningful duration. Oftentimes, researchers will need to apply for a grant multiple times if it gets rejected, further complicating the application process. As such, there is a barrier to entry to realization of a research project, including continuing the research long enough to lead to a patentable invention.

The research leading to the '591 Patent is no exception. The research activities related to the '591 Patent started in 2013 with funding received from two grants from the Natural Sciences and Engineering Research Council of Canada (NSERC) totaling approximately $930,000 (CAD). Ex2046 (listing grants F12-05076 and F17-05084). Four other grants were eventually used to fund the research. *See id*. (listing grants F17-02296, F15-04438, F14-04888, F11-00019). One of those grants from the Canadian Institutes of Health Research (CIHR) was initially rejected in 2013, but was finally accepted in 2015 upon reapplication, eventually contributing over $650,000 (CAD) to the research project. *See id*. (listing grant F15-04438).

Overall, the grant funding related to the '591 Patent totaled approximately $2.5 million (CAD) spanning across six grants. *See id*.

The significant investments in the research leading to the '591 Patent weigh heavily in favor of denial. The '591 Patent is not an inconsequential patent whipped up without thought. Rather, the '591 Patent and the long-term research leading to it is meaningful and contributes to the medical field, namely for fighting heart disease, a leading cause of death throughout the world.

Here, denying institution would avoid waste with respect to the economic and research investments made for the '591 Patent, and allow those investments to come to fruition, for example, through future licensing of the '591 Patent and implementation of the technology in devices to help medical professionals and patients. Failing to deny institution in light of the weaknesses of the merits of the Petition (e.g., in which Petitioner could not provide even one reference that disclosed the use of view-category-specific neural networks—a core aspect of the claims) (*see* §III.A) would stifle incentives for universities to invest in long-term research projects that contribute to society. Thus, this factor weighs in favor of denial.

VIII. CONCLUSION

The factors discussed herein weigh heavily in favor of the Director exercising discretion to deny institution.

Respectfully submitted,

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CERTIFICATE OF WORD COUNT UNDER 37 CFR § 42.24(d)

Under 37 C.F.R. § 42.24(d), the undersigned certifies that the word count for this PATENT OWNER'S BRIEF FOR DISCRETIONARY DENIAL totals 9,034 words, excluding the parts exempted by 37 C.F.R. § 42.24(a). The word count was made using the built-in word count function in the Microsoft® Word software used to prepare this document.

Respectfully submitted,

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CERTIFICATE OF SERVICE

The undersigned certifies that true and correct copies of **PATENT OWNER'S BRIEF FOR DISCRETIONARY DENIAL** and **EXHIBITS 2001-2046** were served electronically on August 25, 2025, in their entirety on the following counsel of record for Petitioner:

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