

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO., LTD.,
Petitioner

v.

CM HK LIMITED,
Patent Owner.

Case IPR2025-01071
Patent No. 11,698,687

PETITIONER'S DISCRETIONARY DENIAL OPPOSITION

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I. INTRODUCTION

Petitioner Samsung’s early challenge of U.S. Patent No. 11,698,687 (“the ’687 patent”), which issued a little over two years ago in July 2023, strongly favors referral to the merits panel. That conclusion is bolstered by Samsung’s strong showing that the Office materially erred in allowing the ’687 patent to issue, the Office’s prior IPR decisions finding unpatentable claims of patents in the priority chain of the ’687 patent, and the lack of a firm trial date in the corresponding district court cases.

First, the ’687 patent issued because of Office material error, in no small part due to Patent Owner’s burying of the U.S. equivalent of Samsung’s prior art (the Bassompierre reference) amongst *seventy-three* (73) citations in an Information Disclosure Statement (“IDS”). *Ecto World LLC v. Rai Strategic Holdings Inc.*, IPR2024-01280, Paper 13 at 7 (May 19, 2025) (precedential) (finding a large number of cited references relevant to the material error inquiry because 87% of applications contain 50 or fewer references and 77% less than 25). Moreover, “even though [the U.S. equivalent of Bassompierre]” was listed on an IDS, it was “not a basis for rejection during examination,” which is evidence of material error. *Id.* at 5. This is especially so because Bassompierre discloses the precise process flow claimed in the challenged claims, ***including the limitations Patent Owner argued were missing from the prior art.*** Bassompierre’s materiality is further confirmed by Patent

Owner's lack of a serious challenge to Bassompierre. Patent Owner merely contends that Bassompierre does not disclose "quaternions" (DD Br. at 20), which is *facially* incorrect (*see infra* Section III).

Second, the '687 patent issued in July 2023 and therefore, Samsung's early IPR challenge "favor[s] robust, predictable patent rights and weigh against discretionary denial." *Valneva Austria GMBH v. Takeda Vaccines, Inc.*, IPR2025-00776, Paper No. 11 (Director August 11, 2025) (referring Petition because a 2023-issued patent "has not been in force for a significant period of time"). Given that the '687 patent only issued in 2023, Patent Owner has "not developed strong settled expectations that favor discretionary denial." *Valneva*, Paper No. 11 at 2 (finding no settled expectations for a 2023-issued patent). Patent Owner's contention that it has settled expectations because a parent application (not even a patent) in the priority chain of the '687 patent published "14 years" ago (DD Br. at 22) is meritless. The Board has determined settled expectations based on the patent issuance date regardless of whether the subject matter of the patent-at-issue published many years before the patent issuance date. *See Tanklogix, LLC v. Sitepro, Inc.*, IPR2025-00647, -00648, -00649, -00650, -00651, -00652, -00653, Paper No. 10 (July 31, 2025) (finding that U.S. Patent No. 10,488,871, which issued in 2019, did not have settled expectations even though its grandparent, U.S. Patent No. 9,342,078, issued in 2016 and had settled expectations). Patent Owner cites no legal authority or special

circumstances that would support deviating from the Board’s *established* practice of judging settled expectations from the issue date of a patent.

Third, the Office previously found unpatentable certain claims of two patents “related to” the ’687 patent in three decisions, each of which was affirmed by the Federal Circuit. (*See infra* Section II.A.) The ’687 patent issued after those IPR decisions, which further favors referral. *Posco Co., Ltd., v. Arcelormittal*, IPR2025-00370, -00371, Paper No. 10 at 2 (June 25, 2025) (“The fact that the Board previously determined related claims to be unpatentable—prior to the issuance of the challenged claims in this proceeding—tips the balance against discretionary denial.”). Given the Board’s familiarity with the subject matter of the ’687 patent and its prior decisions finding unpatentable claims of related patents, including a parent of the ’687 patent, it is an “efficient” use of Board resources to also consider the patentability of the challenged claims in this IPR.

Fourth, the Texas Litigation is stayed pending resolution of the litigation in the Northern District of California (“the California Litigation”) (*see* Ex 1020). There is no trial date in the California Litigation. Additionally, neither court has issued any orders related to the ’687 patent or held a *Markman* hearing. And Patent Owner admits “that the final written decision may issue before either district court case would go to trial, favoring referral.” (DD Br. at 16). The absence of a trial date, the lack of investment by the parties and the court in the parallel litigations, and

Samsung's *Sotera* stipulation, support referral.¹ *Google LLC v. Sandpiper CDN, LLC*, IPR2025-00806, Paper No. 14 at 2 (September 12, 2025) (referring Petition due to stayed parallel district court proceeding); *Google LLC v. Withrow Networks Inc.*, IPR2025-00775, Paper No. 10 at 2 (August 14, 2025) (referring Petition due to lack of scheduled trial date).

Petitioner respectfully requests referral to the merits panel.

II. LITIGATION BACKGROUND

A. History of Litigations and IPRs

The '687 patent is related to two other patents (U.S. Patent No. 8,441,438 and U.S. Patent No. 8,552,978) that the PTAB previously reviewed, finding the challenged claims unpatentable. (*See* Petition at 1-2; DD Br. at 5.) For example,

¹ Patent Owner's assertion that "Petitioner has not offered a *Sotera* stipulation" is an outright misrepresentation. (DD Br. at 19.) On July 19, 2025, Petitioner's litigation counsel (Ms. Elizabeth Brann) sent an email to Patent Owner's litigation counsel stipulating that "if the Patent Trial and Appeal Board ('PTAB') institutes an inter partes review on IPR2025-01071 ('IPR'), then Samsung will not pursue in these actions the specific grounds of invalidity that were raised or reasonably could have been raised in the IPR." (Ex. 1018.)

the '687 patent is a continuation-in-part of the '438 patent and has the same relevant description (*e.g.*, figure 7 and equations 1-14) as the '687 patent. (*Compare* Ex. 1001, *with* Ex. 1009.) The '438 and '978 patents were previously asserted against Samsung. Specifically, on February 17, 2017, CyWee Group Ltd. ("CyWee") filed a complaint against Samsung claiming that Samsung infringed the '438 and '978 patents. *CyWee Group Ltd. v. Samsung Elecs. Co.*, No. 2:17-cv-00140-WCB-RSP, Dkt. 1 (E.D. Tex. Feb. 17, 2017) ("the 2017 CyWee Action"). The Board found all challenged claims of both the '438 and '978 patents unpatentable, and the Federal Circuit affirmed each of those decisions. *See* IPR2019-00143, Paper No. 94; IPR2018-01257, Paper No. 105. Samsung filed a motion to dismiss CyWee's infringement claims with prejudice. *CyWee Group Ltd. v. Samsung Elecs. Co.*, No. 2:17-cv-00140-WCB-RSP, Dkt. 1 (E.D. Tex. Feb. 17, 2017), Dkt. 344. The court granted Samsung's motion to dismiss on August 14, 2024. *Id.* at Dkt. 346.

B. The California and Texas Litigations Involving the '687 Patent

On September 18, 2024, over one month after the 2017 CyWee Action was dismissed, and in the face of CM HK and CyWee threatening to sue for patent infringement, Samsung filed a complaint seeking declaratory judgment of non-infringement of the '687 patent and three other patents in the Northern District of California. *Samsung Elecs. Co. v. CM HK Ltd.*, No. 4:24-cv-6567, Dkt. 1 (N.D. Cal. Sept. 18, 2024). Instead of litigating the dispute over the '687 patent in California,

Patent Owner CM HK sought a different venue. On October 31, 2024, 44 days after Samsung commenced the NDCA Litigation, CM HK filed suit against Samsung in the Eastern District of Texas alleging infringement of, *inter alia*, the '687 patent. *CM HK, Ltd., v. Samsung Electronics Co. Ltd. and Samsung Electronics America, Inc.*, No. 2:24-cv-00880.

On February 11, 2025, Samsung moved the Texas court to dismiss, transfer, or stay the Texas Litigation pending resolution of the California Litigation under the well-settled “First-to-File” rule, which states that “a first-filed declaratory action is entitled to precedence as against a later-filed patent infringement action.” (*See Ex. 1019.*) On August 19, 2025, the Texas court granted Samsung’s request to stay the Texas Litigation pending resolution of the California Litigation. (*Ex. 1020.*) The California Litigation does not have a trial date.²

III. The '687 Patent Issued Because of Material Error

The §325(d) “framework reflects a commitment to defer to previous Office evaluations of the evidence of record unless material error is shown.” *Advanced*

² At this time, there is no Scheduling Order in the California Litigation as the previous Scheduling Order was vacated upon joint motion by the parties. *Samsung Elecs. Co. v. CM HK Ltd.*, No. 4:24-cv-6567, Dkt. 79 (N.D. Cal. Sept. 18, 2024).

Bionics, LLC v. Med-El Elektromedizinische Geräte GMBH, IPR2019-01469, Paper 6, at 9 (Feb. 13, 2020) (precedential). As explained below, there is clear and unequivocal evidence of material error in this case.

In its Petition, Samsung relied on WO 2009/156499 to Bassompierre *et al.* (“Bassompierre”) (Ex. 1005) as rendering obvious the challenged claims. (Petition at 3.) Strictly speaking, Bassompierre was not before the Office. But a U.S. equivalent of Bassompierre (U.S. Patent Publication No. 2011/0199298) was cited in an IDS during prosecution of the ’687 patent. (Ex. 1004 at 110, 138.) Regardless of whether prong one of *Advanced Bionics* is satisfied, under the second prong of *Advanced Bionics*, there has been material error. In determining material error, the Office considers certain non-exhaustive factors, including factors (c), (e), and (f) set forth in *Becton, Dickinson & Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper No. 8, at 17-18 (Dec. 15, 2017) (precedential). *See Ecto World*, Paper No. 13 at 5. Applying the *Becton Dickinson* factors to the facts here, there is **clear** evidence of material error by the Office especially because Bassompierre discloses or suggests all of the claim limitations that Patent Owner alleged were missing from the prior art .

**1. Bassompierre’s U.S. Equivalent Was One of
73 Citations in an IDS and the Office Did Not Issue
Any Rejection Over Bassompierre (or its U.S. Equivalent)**

The Office did not issue any rejection over Bassompierre (or its U.S. equivalent). Nor does the prosecution history of the ’687 patent include any

commentary regarding Bassompierre (or its U.S. equivalent) that would suggest the reference was carefully evaluated by the Office. These facts support a finding of material error under *Becton Dickinson* factor (c) (“the extent to which the asserted art was evaluated during examination, including whether the prior art was the basis for rejection”). See *Ecto World*, Paper No. 13 at 5 (“a petitioner may argue that it satisfies the second part of *Advanced Bionics* because the asserted prior art was not a basis for rejection during examination . . . and includes specific teachings that ‘impact patentability of the challenged claims.’”).)

The Office presumably missed Bassompierre’s disclosure because the U.S. equivalent of Bassompierre was buried amongst *seventy-three* (73) citations in an Information Disclosure Statement, which is further evidence of material error under *Becton Dickinson* factor (f). (Ex. 1004 at 105-115.) *Ecto World*, Paper No. 13 at 7 (finding a large number of cited references relevant to the material error inquiry because 87% of applications contain 50 or fewer references and 77% less than 25).

**2. Bassompierre Discloses or Suggests the
Claim Limitations, Which Patent Owner
Alleged Were Missing from the Prior Art**

Consistent with *Becton Dickinson* factor (e) (“whether Petitioner has pointed out sufficiently how the Examiner erred in its evaluation of the asserted prior art”), Samsung submits that Bassompierre discloses the limitations of the challenged claims that Patent Owner alleged were missing from the prior art. As an initial matter,

Patent Owner's contention that the Petition failed to discuss *Becton Dickinson* (DD Br. at 14-15) is meritless because the Petition need not address discretionary denial issues.³ Regardless, the Petition identified Patent Owner's arguments against the prior art applied by the Examiner (*see* Petition at 12-13) and explained how Bassompierre discloses or suggests each claim limitation. (*Id.* at 25-52.)

During prosecution, in attempting to distinguish over the prior art, Patent Owner amended the claims and argued that the emphasized features (see below) are not disclosed by the prior art.

³ *See* Interim Director Discretionary Process at I.C (“The petitioner . . . should not present discretionary considerations in the petition”), *available at* <https://www.uspto.gov/patents/ptab/interim-director-discretionary-process>.

Claim 1, as amended, recites:

1. An electronic device subject to movements and rotations in a spatial reference frame, comprising:

a motion sensor module having sensor circuitry configured to generate measured angular velocities and measured axial accelerations; and

a computing processor having processor circuitry configured to calculate a resulting deviation associated with the movements and the rotations of the electronic device in the spatial reference frame by performing the following in sequence:

providing a previous quaternion corresponding to time T-1 based on the measured axial accelerations corresponding to time T-1 and the measured angular velocities corresponding to time T-1, without using the measured angular velocities corresponding to time T;

converting measured angular velocities corresponding to time T, based on the previous quaternion, into a current

quaternion corresponding to time T, without using measured axial accelerations corresponding to time T;

converting variables of the current quaternion into predicted axial accelerations corresponding to time T, which is associated with the pitch and roll angles of the electronic device and without being associated with the yaw angle of the electronic device;

comparing the predicted axial accelerations with the measured axial accelerations corresponding to time T to obtain a first comparison result;

obtaining an updated quaternion associated with time T based on the current quaternion and the first comparison result;

using the updated quaternion as a next occurrence of the previous quaternion; and

providing the resulting deviation based on the updated quaternion;

wherein the processor circuitry is further configured to provide content based on the resulting deviation in the spatial reference frame.

(Emphasis Added).

(Ex. 1004 at 390-392.) Per Patent Owner, unlike the prior art (Yamashita and Bachmann), “each of ‘the predicted axial accelerations’, ‘the measured angular velocities’ and ‘the current quaternion’ recited in claim 1 are manifest in the same cycle - that is, each corresponds to time T.” (*Id.* at 392.) The Examiner agreed with

Patent Owner. (*Id.* at 401.⁴) But, as explained in the Petition, Bassompierre expressly discloses such limitations.

For example, Bassompierre discloses providing a “previous quaternion” that is calculated “without using measured axial accelerations corresponding to time T.” (*See* Petition at 32-36.) In particular, Bassompierre provides a state vector $\hat{x}_{k-1}^-$ from the previous iteration $k-1$ ⁵ (represented by the pitch and roll angles from the previous iteration $\begin{pmatrix} \hat{\theta}_{k-1} \\ \hat{\psi}_{k-1} \end{pmatrix}$) in equation 21 and further discloses that the state vector may be in the form of a “quaternion.” (*Id.*; Ex. 1006 at 20:10-19 (“A first variant embodiment consists in replacing the angles of torsion θ and ψ by a quaternion formulation of the same torsion.”).)

The Petition further explained how Bassompierre discloses converting

⁴ The Examiner applied another prior art (Zhao) for these limitations (see Ex. 1004 at 401-402) but withdrew the rejection and allowed the claims once Patent Owner argued that Zhao was not prior art. (*See id.* at 430, 436-437.)

⁵ Bassompierre describes operations in the present loop with the time index “k,” rather than the time index of “T” or “t”, and describes operation in the preceding past loop as “k-1” instead of “T-1” or “t-1”. A POSA would understand k and T or t to be equivalent for purposes of the present analysis (Ex. 1002, App. [1.c], fn. 5.)

measured angular velocities into a current quaternion “without using measured axial accelerations corresponding to time T.” (Petition at 36-38.) Specifically, equation 21 of Bassompierre takes the angular velocities and the state vector $\hat{x}_{k-1}^-$ from the previous iteration k-1 to output a state vector for the current time cycle. No axial accelerations from the current time cycle are used in this equation.

$$\hat{x}_k^- = \begin{pmatrix} \hat{\theta}_k^- \\ \hat{\psi}_k^- \end{pmatrix} = \begin{pmatrix} \hat{\theta}_{k-1}^- \\ \hat{\psi}_{k-1}^- \end{pmatrix} + T_e \begin{pmatrix} \alpha \sqrt{\omega_y^2 + \omega_z^2} \\ \omega_x \end{pmatrix}$$

(Ex. 1006, 19:3 (equation 21); *see also id.*, 4:23-26, 28:13.) Again, the state vector may be in the form of a “quaternion.” (Ex. 1006 at 20:10-19 (“A first variant embodiment consists in replacing the angles of torsion θ and ψ by a quaternion formulation of the same torsion.”).)

Finally, the current state vector (*i.e.*, the current quaternion) is used to predict axial accelerations, as shown in equation 22 below.

$$\hat{y}_k^- = \begin{vmatrix} -\sin \hat{\theta}_k^- \\ \cos \hat{\theta}_k^- \cdot \sin \hat{\psi}_k^- \\ \cos \hat{\theta}_k^- \cdot \cos \hat{\psi}_k^- \end{vmatrix}$$

(*Id.*, 19:4-5 (equation 22); *see also id.*, 4:27-5:1, 28:15-17 (claim 8).) As explained in the Petition, this equation uses pitch and roll angles only, *i.e.*, does not use yaw angles. (Petition at 38-41.)

Rather than engage with the Petition’s analysis (*see* DD Br. at 13-15), Patent Owner baldly asserts that Bassompierre does not disclose “quaternions.” (*Id.* at 20.)

That is a facially inaccurate characterization of Bassompierre for the reasons discussed above. While Bassompierre's equations 21 and 22 rely on Euler angles, the Petition explains how Bassompierre expressly states that quaternions can be used in place of the Euler angles to describe the state vectors. (*See, e.g.*, Petition at 33-35; Ex. 1006 at 20:10-19 ("A first variant embodiment consists in replacing the angles of torsion θ and ψ by a quaternion formulation of the same torsion.").)

Moreover, Patent Owner's contention that Samsung relied "on expert testimony to fill gaps in the prior art" (DD Br. at 21) is simply incorrect. Patent Owner does not identify a single limitation missing from Bassompierre; nor does Patent Owner explain how Samsung's expert allegedly filled "gaps in the prior art." As explained below in Section IV.F, Samsung relied on expert testimony in a manner permissible under Board precedent, not in an attempt to fill gaps in the prior art.

For at least the above reasons, discretionary denial under §325(d) is inappropriate.

IV. THE *FINTIV* FACTORS STRONGLY FAVOR REFERRAL

The *Fintiv* factors support a referral to the merits panel because "it is likely that a final written decision will issue before the district court trial occurs" given that "no trial date has been set in the parallel proceeding involving the parties and challenged patents in district court." *OnePlus Technology (Shenzhen) Co., Ltd., v. Pantech Corporation*, IPR2025-00762, Paper No. 9 at 2 (September 12, 2025).

Under these circumstances, institution of *inter partes* review will not undermine, but encourage the Board’s objectives to advance “efficiency, fairness, and the merits.” *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper No. 11 at 5– 6 (Mar. 20, 2020) (precedential).

A. Factor 1 (stay) Favors Referral Or Is Neutral At Best

This factor weighs in favor of referral because the EDTX Litigation is stayed pending resolution of the California Litigation. (Ex. 1020.) While the California Litigation is not currently stayed, the Board need not speculate as to the likelihood of the district court entering a stay. *See Hulu LLC v. SITO Mobile R&D IP, LLC et al.*, IPR2021-00298, Paper No. 11 at 10-11 (May 19, 2021).

B. Factor 2 (proximity to trial) Strongly Favors Referral

This factor strongly favors referral because there is no scheduled trial date in the California Litigation and the Texas Litigation is stayed. Patent Owner admits as much. (DD Br. at 15 (admitting that Factor 2 “favors a referral to the Board”).)

C. Factor 3 (investment in parallel litigation) Favors Referral

The third factor favors referral. No *Markman* hearing has even been scheduled in either litigation. The Texas Litigation is stayed, and there are no deadlines in the California Litigation. (*Supra* Section II.B.) The lack of a date for a *Markman* hearing, let alone a ruling on claim construction, confirms that there has not been a meaningful investment in the parallel litigation because no “*substantive*

orders related to the [’687 patent]” have been issued by the district courts. *See Fintiv* at 10 (“If, at the time of the institution decision, the district court has not issued orders related to the patent at issue in the petition, this fact weighs against exercising discretion to deny institution”); *id.* at 10 (“district court claim construction orders may indicate that the court and parties have invested sufficient time in the parallel proceeding to favor denial.”). “[M]uch remains to be done in the district court, including expert discovery,” which means factor three weighs against denial. *Samsung Display Co., Ltd. v. Pictiva Displays International Ltd.*, IPR2024-01222, Paper No. 12 at 7 (March 6, 2025).

Patent Owner argues that the parties have exchanged written discovery but can point to no **substantive** order by either court in the parallel proceedings related to the ’687 patent. (DD Br. at 16-17.) Procedural rulings in the parallel proceedings (*e.g.*, rulings on Samsung’s Motion to Dismiss, Transfer, or Stay and a Renewed Motion to Stay) do not constitute **substantive** orders related to the patent at issue in the petition under *Fintiv*.

Patent Owner also argues that Samsung has demonstrated a “preference” for the California court as its forum of choice. (DD Br. at 17.) While Samsung did file a declaratory judgment action in the California court, Samsung only asserted a non-infringement declaratory judgment claim and has stipulated to restricting the scope

of its invalidity defense to CM HK's infringement counterclaims consistent with the *Sotera* Stipulation that Samsung sent to Patent Owner on July 19, 2025. (Ex. 1018.)

D. Factor 4 (overlap) Strongly Favors Referral

This factor (overlap in parallel proceedings) weighs in favor of referral. The Texas Litigation is stayed pending the California Litigation, and the California Litigation is in its early stages of jurisdictional discovery, thus there is hardly any danger of overlap. Patent Owner incorrectly asserts that Samsung has not offered a *Sotera* Stipulation. (DD Br. at 19.) Samsung has indeed offered a *Sotera* Stipulation, which was communicated by Samsung's counsel to Patent Owner's counsel on July 19, 2025. (Ex. 1018.) Samsung stipulated that "if the Patent Trial and Appeal Board ("PTAB") institutes an inter partes review on IPR2025-01071 ("IPR"), then Samsung will not pursue in these actions the specific grounds of invalidity that were raised or reasonably could have been raised in the IPR." (*Id.*) Such a "stipulation [] mitigates any concerns of duplicative efforts between the district court and the Board, as well as concerns of potentially conflicting decisions." *Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019, Paper No. 12 at 19 (Dec. 1, 2020) (precedential); *see also Sand Revolution II, LLC v. Cont'l Intermodal Group – Trucking LLC*, IPR2019-01393, Paper No. 24 at 7 (June 16, 2020) (informative) at 12.

The *Sotera* stipulation ensures that this *inter partes* review will be a "true alternative" to the district court proceeding (*Sotera* at 19) because it covers the full

breadth of estoppel that Congress prescribed under §315(e)(2). As such, Factor 4 “weighs strongly in favor of not exercising discretion to deny institution under 35 U.S.C. § 314(a).” *Sotera* at 19.

E. Factor 5 (same party) Favors Referral

This factor weighs in favor of referral because although Samsung and CM HK are the same parties as in district court, the district court litigation is stayed so the Board will address the patent first. *See Google LLC v. Parus Holdings, Inc.*, IPR2020-00846, Paper No. 9 at 21 (Oct. 21, 2020) (“Petitioner is the defendant in the parallel proceeding. This fact could weigh either in favor of, or against, exercising discretion to deny institution, depending on which tribunal was likely to address the challenged patent first.”); *see also Huawei Tech. Co. v. WSOU Inv., LLC*, IPR2021- 00225, Paper No. 11, at 14 (June 14, 2021) (“this factor ‘favors denial if trial precedes the Board’s Final Written Decision and favors institution if the opposite is true’”).

F. Factor 6 (other considerations) Strongly Favors Referral

Other considerations weigh in favor of referral.

First, the Board’s familiarity with the subject matter of the ’687 patent based on its previous decisions for related patents confirm that the Board is better suited to handle the parties’ validity dispute and adjudicating this dispute will be an “efficient” use of the Board’s limited resources. As Patent Owner admits, the ’687 patent is

“related to” the ’438 and ’978 patents. (DD Br. at 5.) For example, the ’687 patent is a continuation-in-part of the ’438 patent and has the same relevant description (*e.g.*, figure 7 and equations 1-14). (*Compare* Ex. 1001, *with* Ex. 1009.) Like the ’687 patent, the claims of the ’438 patent also involve calculating a resulting deviation using angular velocities and axial accelerations. (*Compare* Ex. 1001 (claim 1), *with* Ex. 1009 (claim 1).) But claims of the ’438 and ’978 patents were previously found unpatentable by the Board in other IPRs before the ’687 patent issued. (Ex. 1011; Ex. 1012; Ex. 1013.) Given the Board’s familiarity with the complicated subject matter of the ’687 patent, it is an “efficient” use of the Board’s resources to also resolve the patentability issues raised by Samsung in this IPR.

Second, contrary to Patent Owner’s allegations (DD Br. at 20-21), Samsung did not rely on expert testimony to fill gaps in the prior art. Indeed, Patent Owner fails to identify a single limitation for which Samsung only relied on expert testimony. (*Id.*) Instead, Samsung’s expert testimony serves as an aid to the Board, especially on issues like motivation to combine and reasonable expectation of success. (*See, e.g.*, Ex. 1002, ¶¶55-85.) Samsung’s expert testimony thus complies with Board precedent. *See iRhythm Technologies, Inc. v. Welch Allyn*, IPR2025-00363, Paper No. 10 at 2–3 (June 6, 2025) (rejecting Patent Owner’s accusation that “Petitioner is over-reliant on expert testimony” and noting that “Petitioner is [not] using its expert to fill gaps in the prior art. Instead, Petitioner appears to rely on its

expert to explain the background knowledge of a person of ordinary skill in the art, and the expert provides citations to evidence in support of his statements in the required manner.”).

Here, the “eighteen pages” of expert testimony that Patent Owner complains about (DD. Br. at 20) pertains to motivation to combine and reasonable expectation of success. (Ex. 1002, ¶¶55-85.) In these “eighteen pages,” Samsung’s expert explains that Bassompierre discloses a variation of its Euler angle embodiment in which state vectors are in “quaternion” form, as opposed to Euler angle form. (*Id.*, ¶55 (citing Ex. 1006, 20:10–19; *see also id.*, 6:3–4, 27:11–14 (claim 1), 30:1–3 (claim 13))). Samsung’s expert testifies regarding the benefits of using “quaternions over Euler angles” with citations to other prior art and the Board’s prior IPR decisions finding that “knowledge of quaternion mathematics [was] within the level of ordinary skill.” (*Id.*, ¶¶55-56.) He then explains “how a person of ordinary skill would use quaternions in place of equations 21-23 in Bassompierre,” which pertains to reasonable expectation of success. (*Id.*, ¶¶57-79.) This detailed testimony is merely an aid for the Board on a seemingly complex issue, which is simple and straightforward for a person of ordinary skill. In no way does the expert testimony fill gaps in the prior art because it merely lays out what Bassompierre assumes a person of ordinary skill in the art would know—how to convert between quaternions and Euler angles.

The Petition should therefore be referred to the merits panel to efficiently resolve the meritorious issues raised by the Petition.

V. SETTLED EXPECTATIONS FAVOR REFERRAL, NOT DENIAL

The '687 Patent issued a little over two years ago on July 11, 2023, and the Petition was filed on May 30, 2025. Thus, Patent Owner does not have strong settled expectations based on the length of time of the '687 Patent has been in force. *See Valneva*, Paper No. 11 (referring Petition because a 2023-issued patent “has not been in force for a significant period of time”). In fact, the Director has found lack of strong settled expectations for patents that issued even earlier than the '687 patent. *See, e.g., Tanklogix*, IPR2025-0064, -00648, -0049, -00650, -00651, -00652, -00653 at 2 (finding that patents issued in “2021, 2022, and 2023” did not have strong settled expectations).

Patent Owner argues incorrectly that settled expectations favor denial because a parent application of the '687 patent published “14 years ago.” (DD Br. at 22.) Patent Owner, however, cites no legal authority supporting its conclusion that the settled expectations analysis should be based on the issue date of a parent application instead of the patent-at-issue. In fact, the Board has refused to find settled expectations for a newer patent even though it found that an older *parent* patent had settled expectations. *See Tanklogix*, IPR2025-0064, -00648, -0049, -00650, -00651, -00652, -00653, Paper No. 10 at 2-3 (finding that U.S. Patent No. 10,488,871, which

issued in 2019, did not have settled expectations even though its grandparent, U.S. Patent No. 9,342,078, issued in 2016 and had settled expectations). There is simply no reason here for the Board to deviate from its *established* practice of judging settled expectations from the issue date of a patent specifically challenged.

Moreover, in addition to the short time the '687 patent has been in force, persuasive reasons exist for why the Board should review the challenged claims. *Intel Corp. v. Proxense LLC*, IPR2025-00327, Paper No. 12 at 2–3 (June 26, 2025) (“There may be persuasive reasons why the Board should review challenged claims several years after their issuance date.”). As Patent Owner admits, the '687 patent is “related to” the '438 and '978 patents. (DD Br. at 5.) But claims of the '438 and '978 patents were previously found unpatentable by the Board in other IPRs before the '687 patent published. (Ex. 1011; Ex. 1012; Ex. 1013; *supra* Section IV.F.) The Board’s prior finding of unpatentability for related patents favors referral, not denial. *Posco*, IPR2025-00370, 00371, Paper No. 10 at 3 (“The fact that the Board previously determined related claims to be unpatentable—prior to the issuance of the challenged claims in this proceeding—tips the balance against discretionary denial.”).

VI. PATENT OWNER’S TERTIARY ARGUMENTS ARE EQUALLY MERITLESS

Patent Owner’s other kitchen-sink arguments are equally unavailing. (DD Br.

at 23-24.) *First*, Patent Owner accuses Samsung of “forum manipulation” by only raising non-infringement claims and omitting invalidity in its declaratory judgment complaint. (*Id.* at 23.) But there is nothing wrong with Samsung preferring the PTAB as its venue for litigating validity, as confirmed by Samsung’s *Sotera* stipulation. In fact, it is Patent Owner that has engaged in forum manipulation by refusing to litigate in California and instead, opening a second front in Texas to litigate the same patent that is already at issue in the California Litigation. (*Supra* Section II.B.) Patent Owner’s accusation that “**Samsung** has simultaneously pressed two district-court actions” (DD Br. at 23 (emphasis added)) is therefore just plain wrong.

Second, Samsung has done nothing that undermines the Congressional framework. (*Id.* at 23-24.) Congress created the IPR regime to allow accused infringers, like Samsung, to seek *inter partes* review. Samsung has done just that. Nor is Samsung seeking “second bites at the apple.” (*Id.* at 23.) By entering a *Sotera* stipulation, Samsung has taken steps to ensure that the district court will not adjudicate the same validity dispute that Samsung is putting before the Board.

VII. CONCLUSION

Given that the discretionary denial considerations support referral as discussed above, Samsung respectfully requests that the Board reach the merits of the Petition.

Respectfully submitted,

Dated: September 23, 2025

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CERTIFICATE OF COMPLIANCE

Pursuant to Acting Director Stewart's March 26, 2025 Memorandum on Interim Processes for PTAB Workload Management, the undersigned certifies that the foregoing Petitioner's Discretionary Denial Opposition contains, as measured by the word-processing system used to prepare this paper, 4,839 words. This word count does not include the items excluded by 37 C.F.R. § 42.24.

Respectfully submitted,

Dated: September 23, 2025

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CERTIFICATE OF SERVICE

I certify that I caused to be served on the counsel identified below a true and correct copy of the foregoing Petitioner's Discretionary Denial Opposition by electronic means on September 23, 2025:

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