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

AUTHORIZED RESPONSE TO DIRECTOR REVIEW REQUEST

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LIST OF EXHIBITS

Ex. 1001	U.S. Patent No. 11,698,687 to Liou et al. ("the 687 patent")
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Ex. 1005	WO 2009/156499 to Bassompiere et al.
Ex. 1006	Certified Translation of WO 2009/156499 to Bassompiere et al. ("Bassompiere")
Ex. 1007	A. Kim and M. Golnaraghi, "A quaternion-based orientation estimation algorithm using an inertial measurement unit," *PLANS 2004. Position Location and Navigation Symposium (IEEE Cat. No. 04CH37556)*, pp. 268-272, 2004 ("Kim")
Ex. 1008	**RESERVED**
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Ex. 1016	5/22/2019 Deposition Trans. Of Dr. Joseph LaViola in IPR-2018-01257 and IPR-2018-01258
Ex. 1017	1/7/2025 Plaintiff's P.R. 3-1 & 3-2 Disclosures for *Samsung Electronics Co, Ltd. et al v. CM HK, Ltd.* (2:24-cv-00880 E.D. Tx.)

Ex. 1018	*Sotera* Stipulation Email From E. Brann to M. Shore on July 19, 2025
Ex. 1019	*CM HK, Ltd., v. Samsung Electronics Co. Ltd. and Samsung Electronics America, Inc.*, No. 2:24-cv-00880, Dkt. 28
Ex. 1020	*CM HK, Ltd., v. Samsung Electronics Co. Ltd. and Samsung Electronics America, Inc.*, No. 2:24-cv-00880 ("the Texas Litigation"), Dkt. 55
Ex. 1021	7/9/2018 Claim Construction Opinion and Order in *CyWee Group Ltd. v. Samsung Elecs. Co., Ltd.*, 17-cv-00140 (E.D. Tx.)

I. INTRODUCTION

Patent Owner seeks to relitigate the merit of institution by relabeling disputes as "legal errors." That is not a basis for Director Review. Patent Owner's arguments merely rehash its preliminary response and the request for discretionary denial, which the Board and the Director carefully reviewed and rejected.[1] As explained below, three of the alleged "errors" pertain to Patent Owner arguments adequately and distinctly addressed by the Board in its institution decision. (Paper 17 ("Decision") at 15-17, 19-22, 33-34). And the fourth alleged error pertains to an argument that was considered and rejected by the Director. (Paper 12 ("Merits Referral") at 2; Paper 10 ("DD Opp.").) The Request should be denied because Patent Owner cannot show that the Board and the Director's rejection of Patent Owner's arguments constitutes an "abuse of discretion" or includes an erroneous finding of material fact or law.

First, the Board properly rejected Patent Owner's argument and found that Petitioner has not taken inconsistent positions with respect to the term "predicted axial accelerations." (Inst. Dec. at 19-21.) The Board explained that the Petitioner

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[1] Acting Deputy Chief Administrative Patent Judge Kalyan Deshpande adjudicated Patent Owner's request for discretionary denial.

had not argued in the *CyWee* case, which was dismissed with prejudice before this IPR was filed following invalidation of related patents in prior IPRs, that the term "predicted axial accelerations" was indefinite. (*Id.*; Paper 14 ("Petitioner Supp. Br.") at 1-2.) Instead, the Board recognized that Petitioner has consistently applied the plain and ordinary meaning for this term, including in the ***pending*** district court litigation in California. (Decision at 15 (recognizing that Petitioner applies the "plain and ordinary meaning" for this term in the concurrent California litigation"), 20 (recognizing that Petitioner argued in the terminated *CyWee* litigation that "calculating predicted axial accelerations" should be accorded its "plain and ordinary meaning").)

<u>*Second*</u>, the Board did not abuse its discretion in not construing "predicted axial accelerations." (*Id.* at 15-17.) As the Board explained, a construction was not necessary to resolve the parties' dispute given that Patent Owner did not distinguish the prior art based on this claim term and acknowledged that the Bassompiere reference "predicts axial accelerations." (*Id.* at 16.)

<u>*Third*</u>, the Board correctly concluded that Petitioner did not improperly rely on expert testimony to fill gaps in the prior art. (*Id.* at 33-34.) <u>*Fourth*</u>, Patent Owner's challenge to the Director's conclusion that a "discretionary denial is [not] warranted under § 325(d)" (Merits Referral at 2) is undeveloped and wholly ignores Petitioner's explanation that the Office materially erred in its consideration of

Bassompiere's U.S. version during prosecution. (Paper 10 at 6-13.)

Patent Owner's Request for Director Review should be denied.

II. PETITIONER'S CLAIM CONSTRUCTION POSITION IS CONSISTENT AND JUSTIFIED

Patent Owner asserts that the "Board incorrectly concluded that Petitioner satisfied the requirements of *Revvo* and *Tesla*[2] despite Petitioner's failure to explain materially inconsistent positions regarding the scope of 'predicted axial accelerations.'" (PO Br. at 4.) The issue of whether Petitioner has taken materially inconsistent positions was front and center before the Board. The Board authorized briefing on this specific issue and concluded the absence of any inconsistency requiring denial of institution under *Revvo.* (Decision at 19-22.) Patent Owner's disagreement with that assessment does not show an abuse of discretion by the Board.

The Board correctly recognized that Petitioner never asserted in the terminated *CyWee* litigation that the term "predicted axial accelerations" was indefinite. (Decision at 19-21 ("We are not persuaded that Petitioner previously asserted that

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[2] *Revvo Techs., Inc. v. Cerebrum Sensor Techs.*, Inc., IPR2025-00632, Paper 20 at 3–4 (Director Nov. 3, 2025) (precedential); *Tesla, Inc. v. Intellectual Ventures II LLC*, IPR2025-00340, Paper 18 at 3 (Director Nov. 5, 2025) (informative).

'predicted axial accelerations,' by itself, is indefinite.").)[3] Patent Owner does not challenge this finding. Instead, Patent Owner confusingly asserts that the Board has allowed "Petitioner to advance materially different positions regarding claim scope." (PO Br. at 8.) But Petitioner has always maintained that the term "predicted axial accelerations" should be given its ordinary meaning. The Board recognized that in both the IPR and the ***pending*** California litigation, Petitioner has argued that the term should be given its ordinary meaning. (Decision at 15.) This is consistent with Petitioner's position in the *CyWee* litigation as confirmed by Petitioner's agreement in that litigation that "a term directed to 'calculating predicted axial accelerations,'" which includes the term "predicted axial accelerations," should be accorded its "plain and ordinary" meaning. (*Id*. at 20.)

To manufacture an inconsistency, Patent Owner misstates Petitioner's position. (PO Br. at 8.) Petitioner's position in the *CyWee* litigation was simply that a POSA would not have known whether ***the claim*** is referring to linear, centrifugal, gravitational acceleration, or a combination from among the three. (Ex. 2025 at 13;

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[3] This is unlike *Tesla*, where the petitioner asserted the disputed claim term to be indefinite in district court litigation but argued before the Board that the term should be given its plain and ordinary meaning. *Tesla*, IPR2025-00340, Paper 18 at 3-4.

see also Decision at 19-20.) That argument is entirely consistent with Petitioner's position that the term "predicted axial accelerations" encompasses these three types of accelerations. The claim in the *CyWee* litigation lacked the necessary clarity because it compared angular velocities with axial measurements and therefore, needed to specify the type of axial acceleration. (Petitioner Supp. Br. at 2-3.) That problem does not exist in the claims at issue in this IPR. (*Id.*) The Board evaluated this exact argument in the institution decision and did not find any inconsistency between Petitioner's arguments. As the Board recognized, "asserting that there may be different types of predicted axial accelerations does not necessarily constitute an assertion that the term is indefinite, only that the term describes a genus that encompasses multiple species." (Decision at 21.)

In addition to concluding that Petitioner has not taken inconsistent positions with respect to the term "predicted axial accelerations," the Board found that "different positions were warranted" in this proceeding because a finding by the district court that "predicted axial accelerations" was definite would give Petitioner "sufficient reason to contend in this proceeding that 'predicted axial accelerations' should be accorded its plain and ordinary meaning, even if it had previously argued that the term was indefinite." (Decision at 21-22; *Revvo*, IPR2025-00632, Paper 20 at 5.) In doing so, the Board did not abuse its discretion.

III. THE BOARD CORRECTLY DETERMINED THAT CONSTRUCTION WAS UNNECESSARY

Patent Owner asserts that the "Board erred by declining to resolve a dispositive claim construction dispute over that term." (PO Br. at 4.) However, the Board did not need to construe "predicted axial accelerations" because such a construction was not necessary to resolve the parties' dispute. (Decision at 16-17.) *See Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.,* 200 F.3d 795, 803 (Fed. Cir. 1999) ("[O]nly those [claim] terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy."); *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (approving Board decision not to construe claim language where the construction is not material to the dispute).

The Board found that the construction of "predicted axial accelerations" is not material to the institution. (*Id.* ("[T]he threshold question of institution can be decided without expressly construing 'predicted axial accelerations.'").) The Board found that "whether or not 'predicted axial accelerations' includes only gravitational accelerations is not, at this stage at least, material to our decision whether to institute, because Patent Owner does not distinguish Bassompiere on this basis." (*Id.*; *see also id.* (citing Paper 9 ("Prelim. Resp.") at 30-31) ("Patent Owner's argument is that Bassompiere 'derives its predicted values from Euler angles (pitch and roll),'

whereas the '687 patent 'derives predicted accelerations from a quaternion-based state updated with gyroscope data.'").) This was confirmed by the fact that Patent Owner acknowledged that Bassompiere predicts axial accelerations. (Decision at 16 (citing Prelim. Resp. 30) ("According to Patent Owner, both Bassompiere and the '687 Patent employ the idea of predicting what the accelerometer should read.").)

To counter the Board's finding that Patent Owner failed to present a dispute with regards to whether the prior art disclosed the claimed "predicted axial acceleration," Patent Owner improperly puts forth a new argument. Specifically, Patent Owner contends that "Bassompiere's gravity-only prediction does not disclose 'predicted axial accelerations' that 'encompass three types of acceleration,' as Petitioner's proposed construction requires." (PO Br. at 10 (citing Petitioner Supp. Br. at 4).) This argument was not made below and "[a]bsent Director authorization, a request for Director Review may not introduce new evidence." 37 C.F.R. § 42.75(c)(3). The argument also makes little sense because Petitioner did not construe the term "predicted axial accelerations." Petitioner merely noted that the term is entitled to its ordinary meaning. While it is true that "axial accelerations" can be one of three types of acceleration, there is no requirement that Bassompiere disclose each of the three types of acceleration, as Patent Owner's argument appears to require. (PO Br. at 10.)

IV. EXPERT TESTIMONY WAS EXPLANATORY, NOT GAP-FILLING

Patent owner rehashes its failed argument that Petitioner improperly relied on expert testimony to "supply missing limitations." (PO Br. at 4, 11, 14.) As explained by the Board, "the teaching to use quaternions instead of Euler angles comes from Bassompiere, not Dr. Sarrafzadeh" who simply explains "how a person of ordinary skill in the art" would have implemented Bassompiere's teachings "given that person's knowledge of quaternion mathematics." (Decision at 29.) This testimony pertains to why a POSA would have reasonably expected success in achieving the claimed invention given their background knowledge, and does not supply a missing limitation. (DD Opp. at 18-19.) Patent Owner cites no authority prohibiting expert testimony regarding the background knowledge and understanding of a POSA.

Patent Owner also quibbles with the Board's factual findings regarding Bassompiere. (PO Br. at 12.) But Patent Owner fails to show that the Board abused its discretion. For example, Patent Owner argues that Bassompiere does not disclose "quaternion-based equations for predicting accelerometer measurements" or that Bassompiere "treats quaternions as part of the state model only." (*Id.* at 12-13.) This ignores the Board's explanation that "Bassompiere's … 'first variant embodiment' of the 'first embodiment . . . replac[es] the angles of torsion θ and ψ by a quaternion formulation of the same torsion,'" which implies that "each calculation in the 'first embodiment,'" replaces quaternions with Euler angles. (Decision at 34 (citing Ex.

1006 at 20:10-21:7).) "With [this] understanding[,] … the 'corresponding counterpart [of equation 22 – the equation for calculating predicted axial accelerations] in the quaternion embodiment' is Bassompiere's equation 22 from the first embodiment combined with Bassompiere's teaching to replace Euler angles with quaternions." (*Id.* (emphasis added).)

Patent Owner's contention that the application of quaternion does not apply to the measurement model is wrong for the reasons noted above. (PO Br. at 12.) Indeed, the rationale disclosed in Bassompiere (Paper 1 at 39-40 (citing Ex. 1006, 20:10-19)) ("avoiding the computations of the sines and cosines of the pitch and roll angles that are greedy in terms of computational power") applies equally to other computations. It would make no sense to utilize the efficiency gained by using quaternions for only state model calculations.

V. THE DIRECTOR CORRECTLY DECLINED TO EXERCISE DISCRETION

Patent Owner asserts that the Board erred in failing to exercise discretion under 35 U.S.C. § 325(d). (PO Br. at 4 ("Board and Director erred by not using discretionary denial and allow[ing] Samsung to present their own English translation of art before the Examiner."); *id.* at 14 ("The petition relies on art previously before the office without identifying material error.").) This argument fails.

First, in seeking to reverse the Director on discretionary denial, Petitioner

improperly cherry picks the § 325(d) issue while completely ignoring the Director's holistic approach to determining whether to exercise discretionary denial, including the *Fintiv* factors and lack of settled expectations. (Merits Referral at 2 ("the determination not to exercise discretion to deny institution is based on a holistic assessment of all of the evidence and arguments presented.").)

Second, contrary to Patent Owner's assertion (PO Br. at 14-15), Petitioner *did* identify material error. Petitioner argued that there had been material error under factors set forth in *Becton, Dickinson & Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper No. 8 at 17-18 (Dec. 15, 2017) (precedential). (DD Opp. at 7-13.) For example, Petitioner argued that a finding of material error under factor (c) was supported by the fact that the Office neither issued any rejection over Bassompiere, nor commented on Bassompiere in the prosecution history. (*Id.* at 7-8; Petition at 4.) Petitioner further argued that a finding of material error under factor (e) was supported because Bassompiere discloses or suggests, *inter alia*, each of the "providing," "converting," "comparing," and "obtaining" limitations of claim 1 of the '687 Patent. (DD Opp. at 8-13.)

VI. CONCLUSION

For at least these reasons, Patent Owner's Request for Director Review should be denied.

Respectfully submitted,

Dated: January 7, 2026

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CERTIFICATE OF SERVICE

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