UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

REVELYST SALES LLC
Petitioner

v.

BRAINGUARD TECHNOLOGIES INC.
Patent Owner

IPR2025-01032
U.S. Patent No. 9,414,635

PETITIONER'S BRIEF IN OPPOSITION TO DISCRETIONARY DENIAL

TABLE OF CONTENTS

Page

I. INTRODUCTION 1

II. MATERIAL ERROR DURING PROSECUTION WEIGHS STRONGLY AGAINST DENIAL 2

III. THE *FINTIV* FACTORS WEIGH IN FAVOR OF REFERRAL 5

- A. *Fintiv* Factor 1: A stay is likely if this IPR is instituted 6
- B. *Fintiv* Factor 2: Any district court trial is likely to occur after a final written decision 6
- C. *Fintiv* Factor 3: The district court case is in its early stages and Petitioner filed its IPR early in the case 7
- D. *Fintiv* Factor 4: The claim, grounds, arguments and evidence in the IPR proceeding do not substantially overlap with the litigation 9
- E. *Fintiv* Factor 5: There is not complete overlap of the parties 11
- F. *Fintiv* Factor 6: The merits of Petitioner's challenge are exceptionally strong 12

IV. NO ADDITIONAL FACTOR FAVORS DENIAL 17

V. RESERVATION OF RIGHTS 20

VI. CONCLUSION 20

TABLE OF EXHIBITS

Exhibit	Description
1001	U.S. Patent No. 9,414,635 (USP635)
1002	Declaration of Dr. Stefan Duma
1003	Prosecution History for U.S. Patent No. 9,414,635 (Knight-635-FH)
1004	U.S. Patent Publication No. 2012/0198604 (Weber)
1005	Int'l Patent App. Pub. No. WO 2001/045526 (VonHolst)
1006	Int'l Patent App. Pub. No. WO 2011/139224 (Halldin)
1007	U.S. Patent Application Publication No. 2013/0122256 (Kleiven)
1008	Reserved
1009	U.S. Patent Application Publication No. 2004/0250340 (Piper)
1010	U.S. Patent Application Publication No. 2006/0059606 (Ferrara-2006)
1011	U.S. Patent No. 6,996,856 (Puchalski)
1012	U.S. Patent No. 10,238,162 (Knight-162)
1013	Prosecution History for U.S. Patent No. 10,238,162 (Knight-162-FH)
1014	U.S. Provisional Application No, 61/462914 (WeberProv)

Exhibit	Description
1015	U.S. Provisional Application No. 61/333817 (HalldinProv)
1016	U.S. Patent Application Publication No. 2008/0066217 (Depreitere)
1017	U.S. Patent No. 3,872,511 (Nichols)
1018	U.S. Patent Application No 2007/0190293 (Ferrara-2007)
1019	U.S. Patent Application No. 2007/0068755 (Hawkins)
1020	Int'l Patent App. Pub. WO 2008/046196 (Cripton)
1021	Pons-Poblet, *The Vierendeel Truss: Past And Present Of An Innovative Typology*, 15 Arquitetura Revista 193 (2019) (Pons-Poblet)
1022	Kis et al., *Rotational Acceleration Measurements –Evaluating Helmet Protection*, 31 Can. J. Neurol. Sci. 499 (2004) (Kis-2004)
1023	Int'l Patent App. Pub. No. WO 1996/014768 (Phillips)
1024	U.S. Patent Application Publication No. 2001/0032351 (Nakayama)
1025	Newman, *Modern Sports Helmet – Their History, Science, and Art* (2007) (Newman)
1026	Kleiven, *A Parametric Study of Energy Absorbing Foams For Head Injury Prevention*, Technical Paper Number 07-0385, 20th Int'l

Exhibit	Description
	Tech. Conf. on Enhanced Safety of Vehicles (June 18-21, 2007) (Kleiven-2007)
1027	Reserved
1028	Aare, *A New Laboratory Rig for Evaluating Helmets Subject to Oblique Impacts*, 4 Traffic Injury Prevention 240 (2003) (Aire-2003)
1029	U.S. Provisional App. No. 61/510,401 (401Prov)
1030	U.S. Patent No. 8,863,319 (USP319)
1031	Bosch, *Crash helmet testing and design specifications* (Jan. 1, 2006) (Ph.D. Thesis, Eindhoven University of Technology) (Bosch)
1032	Mills & Gilchrist, *Bicycle Helmet Design*, 220 Proceedings of the Institution of Mechanical Engineers Part L Journal of Materials Design and Applications 167 (2006) (Mills-2006)
1033	Smith, *Diffuse Axonal Injury in Head Trauma*, 18 J. Head Trauma Rehab. 307 (2003) (Smith-2003)
1034	Jans, *Bike Helmet Anatomy*, https://www.jans.com/anatomy-of-a-bike-helmet?srsltid=AfmBOooriodHXEC54CbWtD0foK5WSXu8-gN0vaAh1lq96kCKdGHJ68FJ (Jans)

Exhibit	Description
1035	Reserved
1036	International Polymer Solutions Inc., *Polycarbonate*, https://www.ipolymer.com/pdf/Polycarbonate.pdf (Intl-Polymer-Solutions)
1037	Universal Foam Products, Physical Properties of Expanded Polystyrene, https://univfoam.com/wp-content/uploads/2015/07/EPS-Data-Sheet.pdf (Universal-Foam-Products)
1038	Duma, *Analysis of Real-time Head Accelerations in Collegiate Football Players*, 15 Clin. J. Sports Med. 3 (2005) (Duma-2005)
1039	Ommaya, *Chapter 13: Biomechanics of Head Injury: Experimental Aspects, in* The Biomechanics of Trauma 245 (1985) (Ommaya-1985)
1040	Viano, *Injury Biomechanics Research: An Essential Element in the Prevention of Trauma*, 22 J. Biomechanics 403 (1989) (Viano-1989)
1041	English Translation of Japanese Unexamined Patent Application Publication No. JP2006-016740 (Dotsuko)

Exhibit	Description
1042	Japanese Unexamined Patent Application Publication No. JP2006-016740 (Dotsuko-Original-Japanese)
1043	U.S. Patent No. 5,353,437 (Field)
1044	U.S. Patent No. 5,129,108 (Copeland)
1045	U.S. Patent No. 4,012,794 (Noniyama)
1046	U.S. Patent No. 7,770,239 (Goldman)
1047	U.S. Patent Application Publication No. 2004/0117896 (Madey)
1048	U.S. Patent Application Publication No. 2013/0019384 (Knight-384)
1049	EPSOLE, *What Is EPS Material: The Complete Guide to EPS Material* (April 15, 2024), https://epsole.com/what-is-eps-material/ (Epsole)
1050	U.S. Patent 9,516,909 (USP909)
1051	Notice of Petitioner's *Sotera* Stipulation
1052	Order Granting Renewed Motion to Stay Pending IPR, Longitude Licensing Ltd. v. Amazon.com, Inc., No. 8:23-cv-00039-JWH-DFMx, D.I. 80 (C.D. Cal. Feb. 26, 2024).

Exhibit	Description
1053	Order Granting Defendants' Motion to Stay Pending Completion of USPTO Inter Partes Review Proceedings and Denying Defendants' Motion to Sever Non-Patent-Related Claims, C.R. Laurence Co. v. Frameless Hardware Co., No. 2:21-cv-01334-JWH-RAO, D.I. 122 (C.D. Cal. Dec. 9, 2022)
1054	Order Conditionally Granting Comcast's Motion to Stay, Entropic Commc'ns LLC v. Cox Commc'ns Inc., No. 2:23-cv-01049-JWH-KES, D.I. 366 (C.D. Cal. Feb. 12, 2025)
1055	Order Granting Stipulation Regarding Dismissal of Claims Related to U.S. Patent No. 8,863,319, BrainGuard Technologies, Inc. v. Revelyst Sales LLC, No. 8:24-cv-2652-JWH-ADS, D.I. 55 (C.D. Cal. Oct. 2, 2025)
1056	Defendant's Civil L.R. 7.1-1 And Fed. R. Civ. P. 7.1 Notices of Interested Parties, BrainGuard Technologies, Inc. v. Revelyst Sales LLC, No. 8:24-cv-2652-JWH-ADS, D.I. 26 (C.D. Cal. Mar. 8, 2025)
1057	Reserved
1058	Reserved

Exhibit	Description
1059	Reserved
1060	Reserved
1061	The History of Mips, https://mipscorp.com/about-mips/history/

I. INTRODUCTION

The strong anticipation and obviousness Grounds of the Petition warrant institution to address material error at the Office in allowing the challenged claims of U.S. Patent No. 9,414,635 (the "'635 Patent" or "Challenged Patent"). The Office rejected similar claims ***five times*** in a family prosecution, but failed to issue even a single prior art rejection in prosecution of the Challenged Patent. As the six Grounds of the Petition make clear, the Challenged Claims were taught in the prior art, including in the Von Holst reference that was before the Office but the Examiner overlooked. Patent Owner's ("PO") merits arguments are not only conclusory but expressly contradicted by the art, and it would be an efficient use of the Board and parties' resources to correct the Office's material error and evaluate the unpatentability of the Challenged Patent in IPR.

None of the *Fintiv* factors PO invokes favors denial. In the pending litigation, there is no trial date, the district court is very likely to grant a stay upon institution, the case is in its early stages, and Petitioner has provided a *Sotera* stipulation. Furthermore, the real parties in interest to Petitioner include a non-party to the litigation, Mips AB ("Mips"), which has customers other than Revelyst and thus a clear interest in challenging the patent. And Petitioner timely filed this IPR (and four related IPRs) more than five months before its statutory deadline and within three months of PO's identification of claims and infringement contentions. PO's

discussion of the *Fintiv* factors relies on skewed or incomplete information and cannot overcome the simple fact that an early-stage parallel district court case does not justify discretionary denial.

Additional factors likewise favor institution. The Petition's merits are exceptionally strong—with multiple anticipation and two- and three-reference obviousness Grounds. And though the Challenged Patent is 9 years old, PO has known for nearly 10 years that the Office rejected substantially similar claims. PO's brief also asserts an economic and public health benefit in the claimed technology, but ignores that Mips is the true innovator. As reflected in the Von Holst and Halldin prior art in the Grounds, Mips scientists have been researching and developing solutions in this field since well before the Challenged Patent, and Mips' customers (which include Revelyst) have commercialized products and been market leaders for over a decade. PO, in contrast, has no commercial product, no history of marking, no prior assertion, and no use of the Challenged Patent. PO had no settled expectation of avoiding IPR; if anything, Revelyst and Mips reasonably expected not to face assertion of such invalid claims.

Petitioner respectfully requests the Director reject PO's request for denial.

II. MATERIAL ERROR DURING PROSECUTION WEIGHS STRONGLY AGAINST DENIAL

This IPR should be instituted because the Office committed material error

during prosecution. This alone supports institution, as "it is an appropriate use of Office resources to review [such] potential error," even if other factors favor denial. *Taiwan Semiconductor Mfg. Co. v. Marlin Semiconductor Ltd.*, IPR2025-00847, Paper 11, 4 (P.T.A.B. Sept. 3, 2025); *see Anthony Inc. v. ControlTec LLC*, IPR2025-00559, Paper 12, 2 (P.T.A.B. July 16, 2025).

As the Petition makes clear through ***six Grounds***, the Challenged Claims should not have been allowed. The alleged problem—injury from rotational forces—and solution—helmets that allow relative sliding to absorb such forces—were extensively discussed and disclosed in the prior art. *See, e.g.*, Pet., 5-26. Notwithstanding, prosecution of the Challenged Patent was limited, with ***zero*** prior art rejections. *See* Ex.1003, 57-62. Von Holst was on an IDS and includes the same disclosure of shell layers and "sliding layers" as the claims. Ex.1003, 8 (IDS); Pet., 48-88. But the Examiner failed to substantively consider this disclosure, which was material error. *See, e.g.*, *Carbyne, Inc. v. Tritech Software Sys.*, IPR2025-00959, Paper 11, 2 (P.T.A.B. Oct. 3, 2025) (material error where Examiner did not analyze IDS reference disclosing limitations purportedly missing from prior art).

Material error by the Examiner of the Challenged Patent is confirmed by the fact that two different Examiners rejected substantially similar claims PO pursued in a separate family ***five times*** before allowing materially narrower claims. Like the Challenged Patent, U.S. Patent Application No. 13/554,563 ("the '563 Application")

claimed priority to U.S. Patent Application No. 61/510,401 ("the '401 Provisional"). In the '563 Application, PO pursued claims to helmets with outer, middle, and inner shell layers connected through "energy and impact transformer layer[s]" "configured to absorb energy" and "allow[] the [outer/middle] shell layer to rotate relative to the [middle/inner] shell layer." Ex.1013, 68 (cl. 2). Claims of the Challenged Patent recite ***substantially similar*** limitations, including outer and inner shell layers "connected through" a "shear mechanism" that includes an "energy transformer" and "allow[s] the outer shell layer to slide relative to the inner shell layer." Ex.1001, cl. 1.

But ***unlike*** the Examiner of the Challenged Patent, two different Examiners of the '563 Application rejected those similar claims ***five times***, citing ***nine*** prior art references and advancing ***four*** anticipation grounds and ***twelve*** obviousness grounds. Ex.1013, 118-126, 171-174, 232-237, 257-263, 314-321. PO thereafter had to materially narrow its claims to recite specific structural and functional features that PO has not accused Petitioner of infringing, including a particular arrangement of diagonal and parallel elastomeric trusses and layers filled with fluid or gel. *See, e.g.*, Ex.1012, cl. 1.

As the Office has repeatedly explained, actual or even potential material error such as this—where a reference on an IDS was not substantively discussed but discloses the claims, and other parts of the Office found similar claims

unpatentable—favor referral to the Board. *See, e.g.*, *Carbyne,* IPR2025-00959, Paper 11, 2; *ClearCorrect Operating LLC v. Align Tech., Inc.*, IPR2025-00814, Paper 14, 3-4 (P.T.A.B. Aug. 29, 2025) (evidence of material error where Board found similar claims unpatentable in IPR and where claims similar to broad claims allowed in parent were rejected over prior art in children); *Padagis US LLC v. Neurelis, Inc.*, IPR2025-00464, Paper 12, 2-3 (P.T.A.B. July 16, 2025) (material error concern where examiner reached different conclusion regarding priority date than Board in IPR finding unpatentability of related patent); *Alliance Laundry Systems, LLC*, PGR2025-0027, Paper 9, 2 (P.T.A.B. July 17, 2025) (Examiner "did not apply any art or reference during prosecution, despite the existence of PTAB proceedings of related patent"); *Samsung Elecs. Co. Ltd. v. Wilus Institute of Standards & Tech. Inc.*, IPR2025-00933, Paper 11, 3-4 (P.T.A.B. Oct. 10, 2025) (evidence of material error where Examiner overlooked disclosures of references); *FreightCar America, Inc. v. National Steel Car Ltd.*, IPR2025-01046, Paper 20, 2-3 (P.T.A.B. Oct. 10, 2025) (finding material error where Examiner overlooked teachings of IDS reference). Here, like in those cases, the Examiner's overlooking of material prior art and inconsistent decisions at the Office strongly support referral.

III. THE *FINTIV* FACTORS WEIGH IN FAVOR OF REFERRAL

None of the six factors from *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (P.T.A.B. Mar. 20, 2020), supports discretionary denial in this case. Patent

Owner's arguments to the contrary misrepresent or ignore the facts.

A. *Fintiv* Factor 1: A stay is likely if this IPR is instituted

Petitioner will move for a post-institution stay, and the District Court is likely to grant it, so Factor 1 weighs strongly against discretionary denial. Judge Holcomb, who is presiding over the parallel district court litigation, has found "[t]here is a 'near uniform line of authority [in C.D. Cal. supporting that] after the PTAB has instituted review proceedings, the parallel district court litigation ordinarily should be stayed.'" Ex.1052, 5 (quoting *Versata Software, Inc.v. Configit A/S*, 2022 WL 3598158, at *3 (C.D. Cal. Apr. 27, 2022)). Consistent with this, Judge Holcomb routinely grants post-IPR-institution stays. *E.g.*, *id.* at 5-6, 8 (granting stay when IPR reached only subset of claims); Ex.1053 (granting stay of patent and non-patent claims); Ex.1054 (post-Markman stay when IPR instituted on subset of claims).

Patent Owner states Petitioner had not yet sought to stay nor indicated it would request one. Paper 10, 3. But Patent Owner never asked Petitioner's position: Petitioner ***will seek*** a stay if IPR is instituted, and it is very likely to be granted.

B. *Fintiv* Factor 2: Any district court trial is likely to occur after a final written decision

There is no trial date set in the parallel litigation, so Factor 2 also weighs against discretionary denial. PO's claim there "is" a trial date (Paper 10, 5) is wrong. As of this brief, there is ***no schedule*** in the parallel litigation.

Relevant median C.D. California trial statistics confirm trial is unlikely to

occur before FWDs, and PO's contentions otherwise are incorrect. Paper 10, 3-4. Over the past three years, the average median time to trial in C.D. California was 27.7 months. *See* Ex.2003 ((25.8 + 29.6 + 27.8)/3 = 27.7 months).[1] This would place trial around March 2027, after the expected January 2027 final written decision date. PO cites statistics from the last six years that include an outlier during the pandemic of only 17.4 months (12-month period ending March 1, 2021) and ignores that median time to trial has increased each year by multiple months. Paper 10, 4; Ex.2003. Using more recent data, trial is likely to occur after FWD and Factor 2 weighs against denial.[2] *Røde Microphones, LLC v. Zaxcom, Inc.*, IPR2025-00557, Paper 11, 2 (P.T.A.B. July 17, 2025) (no denial where no trial date and statistics estimated trial one month after FWD); *Alliance*, PGR2025-0027, Paper 9, 2 (no denial where "no scheduled trial date," little investment, and high likelihood of stay).

C. *Fintiv* Factor 3: The district court case is in its early stages and Petitioner filed its IPR early in the case

Very little investment has been made in the district court litigation to date and

---

[1] Average of the past two years' median is greater, at 28.7 months. Ex.2003.

[2] PO also ignores that the proper starting point is the date of the Second Amended Complaint, which PO filed over four months after the original complaint to correct personal jurisdiction and venue issues, delaying initiation of the case. Measuring from this date (March 2025) extends expected trial later by at least four months.

the district court has issued no substantive orders. The parties have exchanged contentions and made initial document productions, but discovery has just begun, no depositions have been noticed, and there have been no hearings or contested motions before the court. The parties began briefing claim construction for just two terms of one patent, but they did not file responsive briefs or hold a Markman hearing because the subject patent was dismissed from the case against Revelyst. Ex.1055.

The Court did not schedule deadlines past the now-cancelled October 22, 2025 Markman hearing, and there is currently no schedule. Ex.2006, Ex.1055. The parties will not submit schedule proposals until October 22, and the Court will hold a conference October 31, 2025. PO's schedule estimates (Paper 10, 6) are thus speculative. Regardless, even if discovery progresses, PO cites no reasonable possibility of expending significant judicial and party resources before an institution decision in January 2026, and far more resources (through fact and expert discovery, briefing, and trial) will be expended after that date. As discussed in Factor 1, if IPR is instituted, a stay is likely after January 2026 in any event.

Particularly in this context, PO's allegations of "delay[]" ring hollow. Paper 10, 7. This Petition (along with four others challenging a total of 67 claims) was filed five months ***before*** the one-year deadline of 35 U.S.C. § 315(b), approximately four months after PO filed the operative amended complaint, and less than three months after PO's identification of asserted claims and infringement contentions.

See Ex.1052, 7 (granting stay where petitions timely filed six months after litigation). Far from delaying, Petitioner filed this IPR early in the case, and at a time that has avoided substantial overlap or expenditure of resources.

Nor can PO rely on purported "delay" or "settled expectations" based on a single citation in an International Search Report for one of Petitioner's affiliates' patent applications to a published application in the same patent family as the '635 Patent to support discretionary denial. Paper 10, 7, 17-18. First, that attenuated chain of citations does ***not*** establish knowledge of the '635 Patent itself. Second, citation by the International Search Authority in 2017 of an application (not issued patent) did not give PO any settled expectation that the '635 Patent would not be challenged. Indeed, PO has offered no evidence Bell did or should have expected assertion of the '635 Patent before BrainGuard filed suit.

D. *Fintiv* Factor 4: The claim, grounds, arguments and evidence in the IPR proceeding do not substantially overlap with the litigation

The claims, grounds, arguments, and evidence in this IPR will not substantially overlap with those in the litigation. As PO acknowledges, Petitioner challenges multiple patent claims here that are not asserted in litigation. *See* Pet., 1 (challenging claims 1-4, 6, 8-12, 14, and 16-20); Paper 10, 8 (acknowledging that claims 6, 12, and 14 are not asserted). The unasserted claims include limitations that will not otherwise be adjudicated, including where the energy transformer's

absorptive/dissipative material comprises a fluid. Ex.1001, 11:53-54, 12:28-29 (claims 6, 12); *Ecto World, LLC v. Rai Strategic Holdings, Inc.*, IPR2024-01280, Paper 16, 23-24 (P.T.A.B. June 25, 2025) (Factor 4 favors institution when Petition challenges claims and limitations not at issue in parallel proceeding).

Petitioner's *Sotera* stipulation also weighs strongly against discretionary denial, as it reflects Petitioner's agreement that upon institution it will not pursue grounds raised or that could have been raised in this IPR. *See* Ex.1051 (stipulation); Ex.2002, 3 (explaining that such stipulations are "highly relevant"); *Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019, Paper 12, 19 (P.T.A.B. Dec. 1, 2020) (precedential). Contrary to PO's suggestion, upon institution there will thus not be "common prior art challenges" or overlap of grounds. Paper 10, 8.

The mere fact that Petitioner has preserved other grounds of invalidity based on product prior art, Paper 10, 8-11, does not minimize the effect of Petitioner's *Sotera* stipulation or suggest substantial overlap. Notably, PO offers no analysis supporting its conclusory assertion that the identified product prior art overlaps with or is "equivalent" to the art asserted in this IPR. To the contrary, Petitioner has not simply identified product art that corresponds directly or entirely to the asserted IPR art. *E.g.*, Ex.2005 (product prior art from Schutt, Lazer, Burton, TSG, etc.); Ex.1004 (Weber, assignee Innovation Dynamics LLC); Ex.1006 (Halldin, applicant Mips AB); *SAP Am., Inc. v. Isix IP LLC*, IPR2024-00615, Paper 9, 24-25 (P.T.A.B. Sept.

26, 2024) (Factor 4 weighs against denial despite some overlap where Petitioner filed *Sotera* stipulation, litigation includes product art and references not in the Petition, and Petition challenges claims not at issue in litigation). Given the likelihood of a stay, *supra* § III.A, there will be little to no overlap, particularly if the patent is found unpatentable.

E. *Fintiv* Factor 5: There is not complete overlap of the parties

Petitioner Revelyst Sales LLC is a defendant in district court litigation, but real-party-in-interest Mips AB ("Mips") is not. Mips is a supplier and licensor of Petitioner Revelyst and is indemnifying Revelyst in the parallel litigation. Ex.1056. Mips has licensed its technology, which BrainGuard accuses of infringement, to other helmet manufacturers, and therefore has an interest in confirming the unpatentability of the Challenged Patent in this IPR.

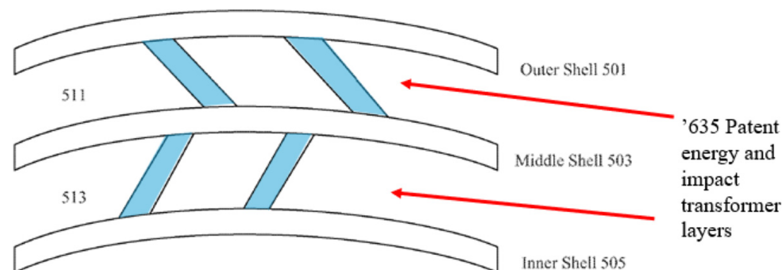
PO's recent dismissal of the '319 Patent from the parallel litigation against Revelyst evidences why discretionary denial is not appropriate. After filing its discretionary denial brief here, but before the district court could consider Revelyst's claim construction position on two claims of the patent, BrainGuard elected to unilaterally dismiss its claims of infringement of the '319 patent and to grant Revelyst and its Affiliates a covenant not to sue to resolve its counterclaims. *See* Ex.1055. But BrainGuard ***declined*** to extend such a covenant to ***Mips*** with respect to Mips' other customers. Factor 5 thus weighs strongly against discretionary denial,

because real-party-in-interest Mips is not a party in the parallel litigation.

F. *Fintiv* Factor 6: The merits of Petitioner's challenge are exceptionally strong

Factor 6 strongly weighs against discretionary denial because the merits of the Petition are exceptionally strong. The Petition identifies ***six Grounds***, supported by a preeminent expert in the field, confirming that every Challenged Claim is unpatentable. These Grounds—including anticipation and two- or three-reference obviousness Grounds—are consistent with the fact that different examiners rejected similar claims in another of PO's applications, evidencing material error. *See* § II.

For example, the '635 Patent claims helmets with outer and inner shell layers and a "shear mechanism" with "energy transformers" that allow sliding.



Ex.1001, Fig.5[3]; Pet., 73. The prior art discloses the ***same thing***:

[3] All annotations added unless stated. The '635 patent claims a "shear mechanism" including "energy transformers" allowing sliding and does distinguish it from "energy and impact transformer layers" as described in the specification.

Weber, Ex.1004, Fig. 4	Von Holst, Ex.1005, Fig. 3b	Kleiven, Ex.1007, Fig. 2(d)	Madey, Ex.1047, Fig. 4a	Dotsuko, Ex.1041, Fig. 4

The merits arguments in PO's discretionary denial brief tellingly omit multiple material disclosures of the prior art and arguments in the Petition.

First, Weber (Ground 1) discloses the claimed "sliding." Weber explains its dampers allow for "lateral or rotational displacement," or "controlled internal omnidirectional relative displacement…including relative rotation and translation…." Ex.1004, [0047], [0010]. This is fully consistent with the '635 Patent itself, which includes an example of "dampers" that allow relative sliding without further implementation details. *See* Pet., 11-12, Ex.1001, 11:3-5, 10:53-60, 2:37-41. PO argues Weber's reference to dampers that allow shells to "move relative to" each other is insufficient because, purportedly, "'[m]ov[ing] relative to each other' does not teach sliding." Paper 10, 12. Tellingly, however, PO does not explain the basis for its contention or, in the context of the '635 Patent, how sliding

purportedly differs from relative movement under the claims. In fact, PO's conclusory assertion is inconsistent with the '635 Patent, which uses "move relative to" and "slide relative to" synonymously. Pet., 11 n.1; Ex.1001, 9:5-14, 9:15-24. Regardless, PO's brief does not address the full Ground, including parts of Weber that disclose lateral or rotational displacement (sliding) consistent with the claims. Pet., 30-33.[4]

Second, Von Holst's (Ground 2) sliding layers and Halldin's fixation members both connect other layers. Von Holst "discloses components connecting its" layers, "including sliding layers 4. Pet., 55. As the '635 Patent explains, "connection…through" for purposes of the patent can be direct or indirect, and includes through intermediate layers. Pet., 11, 56 n.13; Ex.1001, 8:43-48, 10:39-41, Fig. 5. PO's note that Von Holst ***also*** has what it calls "connecting members," does not change this disclosure, as PO nowhere explains why Von Holst's layers cannot be connected in multiple ways. Paper 10, 12-13; *see* Pet., 60 (discussing connecting members in addition to transformer layer connection). In fact, the Challenged Patent

---

[4] PO also references that Weber's dampers are "fixedly-attached" and vaguely suggests that means "Weber's system does not slide." Paper 10, 12. PO offers no explanation. The '635 patent describes Figure 5 as having attached trusses ***and*** allowing sliding, and PO identifies no inconsistency. Ex.1001, 8:49-9:23, Fig. 5.

acknowledges there may be "supplement[al]… connection" in ***addition*** to an energy and impact transformer layer that connects shell layers. Ex.1001, 8:43-48.

Regardless, contrary to PO's suggestion that the Petition only "identifies the shear mechanism as Von Holst's 'sliding layers,'" Paper 10, 12, the Petition expressly states that "the combination discloses at least a shear mechanism including…sliding layers…from Von Holst, and Halldin's fixation members…." Pet., 55-56. To the extent Von Holst does not disclose connection (it does), Halldin's fixation members directly connect layers[5] "that transform energy by 'deform[ing]' and shearing and that allow relative sliding between the outer and inner layers." Pet., 59 (citing Ex.1006, [0013], [0047-48]).

Third, Kleiven (Ground 5 and 6) also discloses the claimed sliding. Far from "reject[ing]" Von Holst, Paper 10, 13, Dr. Von Holst is a named inventor on Kleiven, and his later patent filing further developed the art. Kleiven thus teaches layers separated by spikes/beams—in the same manner as Figure 5 of the '319 patent—that "permit displacement of the outer shell relative to the inner shell." Pet., 72;

---

[5] PO contends "the Petition never argues that Halldin's fixation members provide such a connection," Paper 10, 13, but this is wrong. *E.g.*, Pet., 55-56 (Ground with "Halldin's fixation members, located between and connecting Von Holst's" layers), 60 (discussing incorporating Halldin's "internal fixation connections").

Ex.1007, [0048]; Ex.1001, Fig. 5. PO contends that these spikes/beams only "deform…to absorb energy, not to allow sliding," Paper 10, 13, but offers no basis for this conclusory contention. In fact, as the Challenged Claims show, layers that transform energy can ***also*** include material to allow relative sliding. *E.g.*, Ex.1001, cl. 3 ("wherein the shear layer is connected to the outer shell layer through the first energy transformer…first energy transformer includes a first absorptive/dissipative material to allow the outer shell layer to slide relative to the inner shell layer").

PO distinguishes Kleiven's trusses as "plasticizing" or "yielding," Paper 10, 13-14, but ignores its disclosure of "flexible" spikes/beams like the "elastomeric" trusses of Challenged Patent Figure 5. Pet., 72-73, 75, Ex.1007, [0048], [0062].

Fourth, Dotsuko (Grounds 4 and 5) discloses the claimed sliding. Dotsuko's elastic body allows "'displacing in the direction of the [impact] force' such that the 'shell 20 relatively rotates with respect to the liner 30.'" Pet., 88; Ex.1041, [0016]; *id.*, [0017] (elongation allows "relative rotation of" shell/outer liner v. inner liner). PO's contention this is not sliding, Paper 10, 14, is unexplained and inconsistent with the Patent, which uses "move relative to" and "slide relative to" synonymously, and describes gels as allowing sliding. Pet., 11 n.1; Ex.1001, 9:5-14, 9:15-24; 6:43-45. PO does not explain how the '635 Patent's trusses with gels allow sliding but Dotsuko's straps with gel-like substance do not. They do. Pet., 88.

Fifth, Madey (Ground 6) also discloses the claimed sliding. Madey's "hyper-

elastic columns" can "bend[] and stretch[] in response to tangential force" and allow "relative displacement" between the outer and inner helmet layers." Pet., 98; Ex.1047, [0037], FIG. 9B. PO concedes Madey allows "translation of one layer relative to another," but contends Madey does not allow sliding because its columns are "fixedly attached to both shell layers." Paper 10, 15. But as discussed, the '635 Patent describes Figure 5 as both having attached trusses ***and*** allowing sliding. *See* Pet., 11 n.1; Ex.1001, 9:5-14, 9:15-24. PO does not explain how the '635 Patent's attached trusses allow sliding but Madey's columns do not. They do.

IV. NO ADDITIONAL FACTOR FAVORS DENIAL

None of the other factors Patent Owner identifies supports denial here.

First, as described in § III.F, the merits of this petition are very strong.

Second, Petitioner's reliance on expert testimony is proper. Dr. Duma, a preeminent expert who leads the largest helmet testing lab in the United States, offers relevant background of the POSITA's knowledge, citating evidence supporting his statements as required. *See* 37 C.F.R. § 42.65(a); Ex.1002, ¶5. PO's criticism of the length of his declaration, Paper 10, 15-16, is misplaced, both because it includes his credentials, legal principles, technology background, and overview of the relevant art, and because the length reflects the depth of and support for his analysis. And PO's separate criticism of his declaration as purportedly being "duplicative" or "circular" is unsubstantiated and wrong. PO's brief offers ***no example*** of such

testimony and makes no attempt to apply its cited cases to the facts here.

PO's accusation that Dr. Duma is "filling gaps," Paper 10, 16, in the art is also wrong. With respect to both the sliding of Weber and the absorption of Von Holst, the references themselves establish unpatentability, and Dr. Duma explains what ***the disclosures of the references*** taught those of ordinary skill in the art; he nowhere attempts to argue a claim limitation would simply be supplied by the knowledge of a POSITA. *See, e.g.* Ex.1002, ¶¶98-105 (explaining Weber's disclosure of sliding); ¶178 (explaining Von Holst's (***and Halldin's***) disclosure of absorption/dissipation); § III.F.

Third, the expectations of the parties favor review, not denial. PO argues the Challenged Patent is 9 years old, but not ***why*** that led it to any expectation. It omits that, in fact, PO has been aware since 2015 that the Office rejected similar claims in a different application, material error that outweighs any alleged settled expectations. *Supra* § II; *e.g. Ensung Global Corp. v. Hydrafacial LLC*, IPR2025-00445, Paper 14 (P.T.A.B. July 10, 2025) (material error weighed against denial even where patent 8 years old); *Xencor, Inc. v. Merus N.V.*, IPR2025-00604, Paper 12 (P.T.A.B July 17, 2025) (same for 9-year-old patent). And PO's brief does not allege the patent was ever commercialized, any product was marked with it, it was asserted or licensed, or it was otherwise applied. PO, in fact, has no commercial product, provides no evidence of marking, did not assert it before the parallel case

here, and has not otherwise applied it. This lack of use overcomes any expectations PO may have had based solely on the patent's age. *See, e.g.*, *Shenzen Tuozhu Tech. Co., Ltd. V. Stratasys, Inc.*, IPR2025-00438, Paper 10 (P.T.A.B. July 17, 2025); *Intel Corp. v. Proxense LLC*, IPR2025-00327, Paper 12 (P.T.A.B. June 26, 2025).

In contrast, Petitioner and its RPIs should not have been expected to be faced with assertion of a patent with claims nearly the same as those rejected by another examiner. *Supra* § II. Instead, Mips and its customer Revelyst should reasonably be entitled to rely on their expectation that PO would not assert invalid patents on technology Mips scientists and engineers—including the inventors of Von Holst (Ex.1005) and Halldin (Ex.1006)—developed first and commercialized. As discussed in Section III.C, citation by the International Search Authority in 2017 of an application (not issued patent) of a family member of the Challenged Patent does not overcome this expectation. To the contrary, PO's decision ***not*** to assert the Challenged Patent for over a decade supports Petitioner's expectations.

Fourth, PO identifies no compelling economic or health interest that would weigh against discretionary denial. That PO is in debt, Paper 10, 19, is no reason to deny the IPR in this case. PO cites no law or reason to support the idea that a patent should be shielded from meritorious challenge solely because the inventor wishes to "recoup at least some of its investment." Paper 10, 19.

And though Petitioner agrees there is a compelling public health interest in

protecting people from rotational forces, Petitioner—***not*** PO—is serving that interest. PO has ***never*** brought a product to market or licensed its technology. Instead, Revelyst and Mips have innovated and commercialized technology to protect against rotational forces and mitigate brain injuries. *See* Ex.1005 (***Mips's*** prior-art Von Holst publication); Ex.1061 (25-year history of Mips innovation and development). If anything, the Office should consider the economic interests of Petitioner and its affiliates, which have thousands of U.S.-based employees and are developing and commercializing these important helmet technologies, including its interest in challenging meritless patent assertions.

V. RESERVATION OF RIGHTS

Petitioner hereby preserves the argument that the discretionary denial procedures adopted by the Director in Exs.2001, 2002, 2006, and 2007—and any future procedures that may be promulgated without notice and comment rulemaking and be found to apply to this proceeding—are improper and contrary to law. The Director's institution criteria, including the "settled expectations" rule, violate the Due Process Clause of the Constitution and the Administrative Procedure Act.

VI. CONCLUSION

PO's request for discretionary denial should be denied, and the Petition should be instituted.

Respectfully Submitted,

Dated: October 20, 2025

/David L. Cavanaugh/
David Cavanaugh
Registration No. 36,476

CERTIFICATE OF SERVICE

I hereby certify that on October 20, 2025, I caused a true and correct copy of the foregoing materials:

- Petitioner's Brief in Opposition to Discretionary Denial
- Exhibit List
- Exhibits for Petitioner's Brief in Opposition to Discretionary Denial (Exs.1052-1056, 1061)

to be served on Patent Owner via electronic mail to:

Folio Law Group PLLC
1200 Westlake Ave. N., Ste. 809
Seattle, WA 98109

David D. Schumann (Reg. No. 53,569) david.schumann@foliolaw.com
Timothy Dewberry (Reg. No. 62,947) timothy.dewberry@foliolaw.com

Dated: October 20, 2025

/Patrick E. Nyman/
Patrick Nyman
Reg. No. 76,123