

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

VALVE CORPORATION,
Petitioner,

v.

IMMERSION CORPORATION,
Patent Owner.

IPR2024-00478
Patent 9,430,042 B2

Before WILLIAM V. SAINDON, PATRICK R. SCANLON, and
CHRISTOPHER L. OGDEN, *Administrative Patent Judges*.

SCANLON, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

Valve Corporation (“Petitioner”) filed a Petition (Paper 2, “Pet.”) requesting an *inter partes* review (“IPR”) of claims 1–19 of U.S. Patent No. 9,430,042 B2 (Ex. 1001, “the ’042 patent”). Immersion Corporation (“Patent Owner”) filed a Preliminary Response (Paper 6, “Prelim. Resp.”). With our authorization, Petitioner filed a Reply (Paper 8, “Prelim. Reply”) to the Preliminary Response, and Patent Owner filed a Sur-reply (Paper 10, “Prelim. Sur-reply”).

We have authority to determine whether to institute an *inter partes* review. *See* 35 U.S.C. § 314 (2018); 37 C.F.R. § 42.4(a) (2022). To institute an *inter partes* review, we must determine that the information presented in the Petition shows “a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a). For the reasons set forth below, we determine that Petitioner has demonstrated a reasonable likelihood that it would prevail with respect to at least one challenged claim. Accordingly, we institute an *inter partes* review of the challenged claims on the grounds set forth in the Petition.

Our factual findings and conclusions at this stage of the proceeding are based on the evidentiary record developed thus far. This is not a final decision as to patentability of the challenged claims. Any final decision will be based on the full trial record, including any response to the Petition timely filed by Patent Owner.

II. BACKGROUND

A. *Real Parties in Interest*

Petitioner identifies itself as the real party in interest. Pet. xi. Patent Owner identifies itself as the real party in interest. Paper 4, 1.

B. Related Matters

The parties indicate that the '042 patent is at issue in *Immersion Corporation v. Valve Corporation*, No. 2:23-cv-00712 (W.D. Wash.). Pet. xi; Paper 4, 1.

C. The '042 Patent

The '042 patent, titled “Virtual Detents Through Vibrotactile Feedback,” issued on August 30, 2016, with claims 1–19. Ex. 1001, codes (45), (54), 15:2–16:54. According to the '042 patent, “[w]ith many traditionally mechanical functions being replaced by electronics, operation of electronic controls has been made less intuitive to users.” *Id.* at 1:30–32. In particular, the '042 patent notes that “without click-stops or ‘detents,’ or otherwise a sense of mechanical resistance, it may be difficult to obtain a similar experience from an electronic substitute for a traditional mechanical control device or even effectively and efficiently operate such a device.” *Id.* at 1:32–37. To address this issue, the '042 patent discloses methods and systems for providing virtual detents through vibrotactile feedback. *Id.* at 1:47–49.

Figure 1 of the '042 patent is reproduced below.

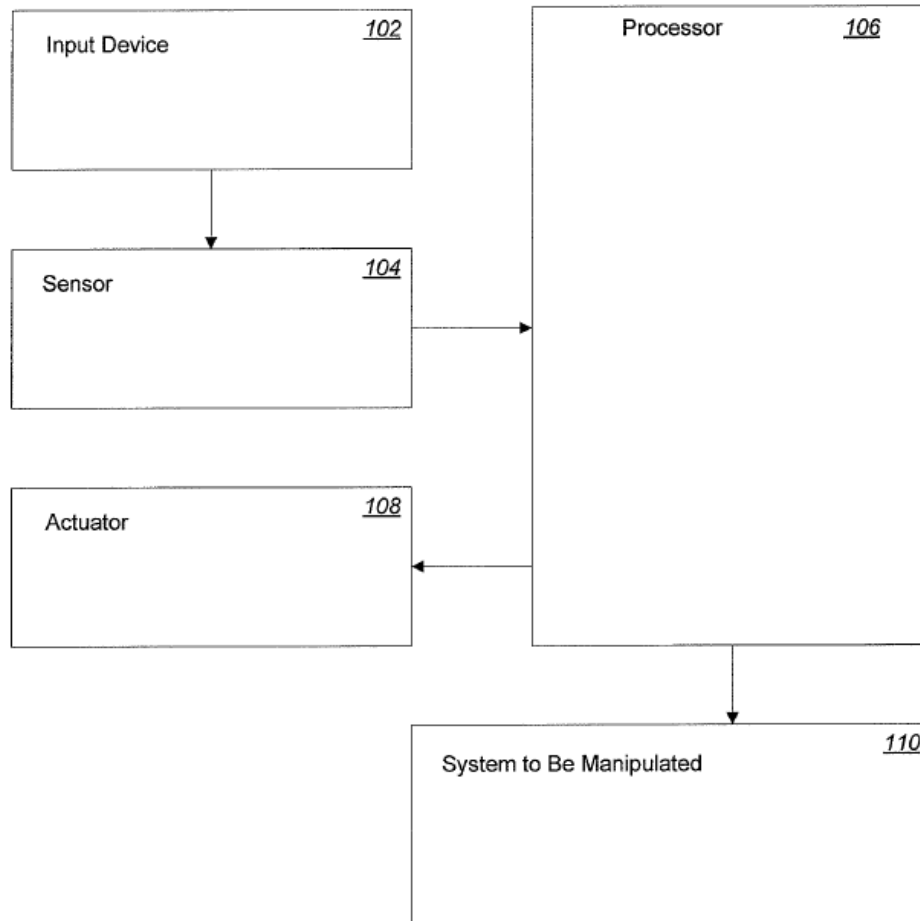


Figure 1 is a block diagram depicting a first system for providing virtual detents through vibrotactile feedback. Ex. 1001, 2:13–14. The system comprises input device 102, sensor 104, processor 106, actuator 108, and system to be managed 110. *Id.* at 3:28–30. When manipulated, input device 102 provides an input signal to processor 106. *Id.* at 3:35–37. In one embodiment, sensor 104 generates the input signal when it detects manipulation of input device 102. *Id.* at 3:37–39.

Processor 106 generates as a detent signal that is output to actuator 108 and causes actuator 108 to produce a vibrotactile effect in the form of a virtual detent on input device 102. *Id.* at 4:35–38. Processor 106 may generate the signal by accessing a detent profile stored in a memory.

Id. at 4:50–51. Figures 9A–9H illustrate various detent profiles. *Id.* at 13:37–39.

Input device 102 can be a mechanical device, such as a rotary knob, or a non-mechanical device, such as touchpad. *Id.* at 3:40–47. Actuator 108 vibrates input device 102 to provide vibrotactile feedback. *Id.* at 5:57–59. “[A]ctuator 108 may be configured to provide the perception of a detent (i.e. a virtual detent) without the traditional means necessary for a mechanical detent.” *Id.* at 6:1–3.

D. Challenged Claims

Of the challenged claims in the ’042 patent, claims 1, 9, 10, 14, and 15 are independent. Claim 1 is illustrative of the claimed subject matter and is reproduced below.

1. A method comprising:

receiving an input signal comprising information associated with a manipulation of an input device configured to control a plurality of systems, wherein the input device comprises a touch-pad;

receiving a detent profile associated with one of the systems, the detent profile comprising haptic data associated with a virtual detent; and

generating a vibrotactile signal configured to cause an actuator to produce a vibrotactile effect to the input device, the vibrotactile effect comprising the virtual detent.

Ex. 1001, 15:2–13.

E. Asserted Grounds of Unpatentability

Petitioner contends that the challenged claims are unpatentable based on the following grounds:

Claims Challenged	35 U.S.C. § ¹	Reference(s)/Basis
1–19	103	Ichinose, ² Levin ³
1–19	103	Wang, ⁴ Ichinose
1–19	102	Rosenberg-I ⁵
1–19	103	Rosenberg-I, Goldenberg ⁶

Pet. 3. Petitioner relies on the Declaration of Jean Renard Ward (Ex. 1003) to support its challenges. Patent Owner relies on the Declaration of Craig Rosenberg, Ph.D. (Ex. 2001) to support its Preliminary Response.

III. ANALYSIS

A. Level of Ordinary Skill in the Art

In determining whether an invention would have been obvious at the time it was made, 35 U.S.C. § 103 requires us to resolve the level of ordinary skill in the pertinent art at the time of the invention. *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966). The person of ordinary skill in the art is a hypothetical person who is presumed to have known the relevant art at the time of the invention. *In re GPAC, Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995). Factors that may be considered in determining the level of ordinary skill in the art include, but are not limited to, the types of problems encountered in the art, the sophistication of the technology, and educational

¹ The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112–29, 125 Stat. 284, 287–88 (2011), amended 35 U.S.C. §§ 102, 103, effective March 16, 2013. Because the challenged claims of the ’042 patent have an effective filing date before March 16, 2013, the pre-AIA versions of 35 U.S.C. §§ 102, 103 apply.

² US 6,819,990 B2, issued November 16, 2004 (Ex. 1015).

³ US 6,686,911 B1, issued February 3, 2004 (Ex. 1016).

⁴ WO 02/102616 A2, published December 27, 2002 (Ex. 1022).

⁵ US 6,429,846 B2, issued August 6, 2002 (Ex. 1009).

⁶ US 6,636,197 B1, issued October 21, 2003 (Ex. 1007).

level of active workers in the field. *Id.* In a given case, one or more factors may predominate. *Id.*

Petitioner contends that a person having ordinary skill in the art “would have a bachelor’s degree in electrical engineering, computer science, or a related field, plus at least two years of industry or graduate level experience with software engineering, haptics programming, and/or human-computer interaction, including experience with user-interfaces and applications involving touchscreens, touchpads, and related technologies.” Pet. 8 (citing Ex. 1003 ¶¶ 37–43).

Patent Owner contends that a person having ordinary skill in the art “would have had a bachelor’s degree in electrical engineering or computer science (or an equivalent degree), and two years of practical or industry experience in the field of human computer interaction (HCI), including implementation of computer-based systems and software for providing haptic feedback effects to a user,” and adds that a person having ordinary skill in the art “could have qualified . . . with more formal education and less practical or industry experience, or vice versa.” Prelim. Resp. 9 (citing Ex. 2001 ¶ 32).

Although not identical, the parties’ definitions are substantially similar. Accordingly, for purposes of this Decision, we determine that no express finding is necessary, and that the level of ordinary skill in the art is reflected by the prior art of record. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001). We note, however, that our obviousness analysis in this Decision would not differ if we adopted either Petitioner’s or Patent Owner’s definition.

B. Claim Construction

In *inter partes* reviews, the Board interprets claim language using the district-court-type standard, as described in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). *See* 37 C.F.R. § 42.100(b). Under that standard, we generally give claim terms their ordinary and customary meaning, as would be understood by a person of ordinary skill in the art at the time of the invention, in light of the language of the claims, the specification, and the prosecution history. *See Phillips*, 415 F.3d at 1313–14. Although extrinsic evidence, when available, may also be useful when construing claim terms under this standard, extrinsic evidence should be considered in the context of the intrinsic evidence. *See id.* at 1317–19.

Petitioner argues that “[b]ecause the petition’s art plainly discloses each element of the challenged claims under any plausible construction, no outer boundary constructions are necessary.” Pet. 10 (citing *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co. Ltd.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017)).

Patent Owner asserts that “all terms may be given their ordinary and customary meaning, as understood by a [person having ordinary skill in the art], in the context of the patent specification, and that no argument herein requires a special construction for any particular term.” Prelim. Resp. 10. Patent Owner discusses the constructions for “detent,” “virtual detent,” and “detent profile” that Petitioner proposed in the parallel district court proceeding. *Id.* at 9–12.

We do not discern a need to construe explicitly any claim language at this juncture because doing so would have no effect on our analyses below of Petitioner’s asserted grounds and will not assist in resolving the present controversy between the parties. *See Realtime Data, LLC v. Iancu*, 912 F.3d

1368, 1375 (Fed. Cir. 2019) (“The Board is required to construe ‘only those terms . . . that are in controversy, and only to the extent necessary to resolve the controversy.’”) (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

C. Discretion Under 35 U.S.C. § 314(a)

Patent Owner argues that we exercise our discretion under 35 U.S.C. § 314(a) to deny institution in view of the parallel district court proceeding. Prelim. Resp. 62–68; Prelim. Sur-reply 6–7. Petitioner argues that we should not exercise discretion to deny institution under 35 U.S.C. § 314(a). Pet. 72–73; Prelim. Reply 4–7. For the reasons stated below, we do not exercise our discretion to deny institution in view of the parallel proceeding.

Institution of an *inter partes* review is discretionary. *See* 35 U.S.C. § 314(a) (authorizing institution of an *inter partes* review under particular circumstances, but not requiring institution under any circumstances); *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2140 (2016) (“[T]he agency’s decision to deny a petition is a matter committed to the Patent Office’s discretion.”); *SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348, 1356 (2018) (“[Section] 314(a) invests the Director with discretion on the question whether to institute review” (emphasis omitted)); *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1367 (Fed. Cir. 2016) (“[T]he PTO is permitted, but never compelled, to institute an IPR proceeding.”).

Under Board precedent, one of the considerations that may weigh in favor of denying a petition under § 314(a) is the advanced state of a parallel district court action. *See NHK Spring Co. v. Intri-Plex Techs., Inc.*, IPR2018-00752, Paper 8 at 20 (PTAB Sept. 12, 2018) (precedential); Patent Trial and Appeal Board, Consolidated Trial Practice Guide (“CTPG”) 58,

n.2 (Nov. 2019).⁷ In *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (PTAB Mar. 20, 2020) (precedential) (“*Fintiv*”), the Board set forth the following non-exclusive factors for determining whether to deny institution under § 314(a) based on the parallel district court proceeding:

1. whether the court granted a stay or evidence exists that one may be granted if this proceeding is instituted;
2. proximity of the court’s trial date to the Board’s projected statutory deadline for a final written decision;
3. investment in the parallel proceeding by the court and the parties;
4. overlap between issues raised in the petition and in the parallel proceeding;
5. whether the 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.

Fintiv at 5–6.

These factors “relate to whether efficiency, fairness, and the merits support the exercise of authority to deny institution in view of an earlier trial date in the parallel proceeding.” *Id.* at 6. Further, the Board should take “a holistic view of whether efficiency and integrity of the system are best served by denying or instituting review.” *Id.* The Director has also issued interim guidance to the Board on applying these factors. *See* Katherine K. Vidal, Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings with Parallel District Court Litigation (June 21, 2022) 9, available at https://www.uspto.gov/sites/default/files/documents/interim_

⁷ Available at <https://www.uspto.gov/TrialPracticeGuideConsolidated>.

proc_discretionary_denials_aia_parallel_district_court_litigation_memo_20220621_.pdf(“Director Memo”).

We address each factor below.

1. Factor 1: whether the court granted a stay or evidence exists that one may be granted if this proceeding is instituted

Since the filing of the Petition, the parallel district court proceeding has been stayed. Ex. 2004. According to *Fintiv*, “[a] district court stay of the litigation pending resolution of the PTAB trial allays concerns about inefficiency and duplication of efforts” and “has strongly weighed against exercise of the authority to deny institution.” *Fintiv* at 6; *see also Snap, Inc. v. SRK Tech. LLC*, IPR2020-00820, Paper 15 at 9 (PTAB Oct. 21, 2020) (precedential as to § II.A) (“*Snap*”) (holding that the granting of a stay pending *inter partes* review weighs strongly against exercising discretion to deny institution).

Patent Owner’s arguments concerning the stay center on the fact that Petitioner has not offered a *Sotera* stipulation.⁸ *See* Prelim. Resp. 63–65; Prelim. Sur-reply 6–7. In particular, Patent Owner argues that “Petitioner’s decision not to offer a *Sotera* stipulation neutralizes the effects of the pre-institution stay recently entered by the District Court,” and “a stay of District Court proceedings, when coupled with a *Sotera* stipulation, can make discretionary denial under *Fintiv* inappropriate.” Prelim. Resp. 63–64. Patent Owner also argues that “Petitioner’s refusal to file [a *Sotera* stipulation] undercuts the relevance of the stay to the Board’s exercise of

⁸ *See Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019, Paper 12 at 18–19 (PTAB Dec. 1, 2020) (precedential) (finding that “a stipulation that, if IPR is instituted, they will not pursue in the District Court Litigation any ground raised or that could have been reasonably raised in an IPR,” weighed strongly in favor of not exercising discretion to deny institution).

discretion under *Fintiv*,” and concludes that “[t]he Board should give less weight to the stay due to Petitioner’s failure to file a *Sotera* stipulation.”

Prelim. Sur-reply 6.

We do not find Patent Owner’s arguments persuasive. Patent Owner does not provide any authority supporting its position that failure to provide a *Sotera* stipulation “neutralizes” or “undercuts” the impact of a stay. We also disagree with Patent Owner’s suggestion that a district court stay can make discretionary denial inappropriate only when coupled with a *Sotera* stipulation. *See* Prelim. Resp. 64. Again, Patent Owner does not provide any authority supporting this position. *Id.* Contrary to Patent Owner’s positions, *Fintiv* indicates a district court stay “has strongly weighed against exercise of the authority to deny institution” independent of whether a *Sotera* stipulation—or any other type of stipulation—has been submitted. *Fintiv* at 6.

In addition, Petitioner identifies several Board decisions in which a district court stay strongly weighed against discretionary denial despite the absence of a *Sotera* stipulation. Prelim. Reply 5 (citing *Apple Inc. v. Speir Techs., Ltd.*, IPR2023-00151, Paper 9 at 8 (June 9, 2023) (“*Speir Techs.*”); *Snap* at 8–9; *Beckman Coulter, Inc. v. Sirigen II Ltd.*, IPR2022-01203, Paper 12 at 20 (Jan. 6, 2023) (“*Beckman*”); *Lyft, Inc. v. AGIS Software Dev. LLC*, IPR2022-00513, Paper 11 at 6 (June 2, 2022)).⁹

In addition, we disagree with Patent Owner’s argument that “if the Board denies institution, the district court case will resume and Petitioner will get a second bite, raising the same arguments again.” *See* Prelim.

⁹ The *Speir Techs.* case involved a stipulation that was narrower than a *Sotera* stipulation.

Sur-reply 7. On the contrary, if we were to deny institution discretionarily, then Petitioner's unpatentability arguments would not be addressed by the Board. Thus, Petitioner advancing these arguments before the district court would not amount to a "second bite."

In view of the above, we determine that this factor strongly weighs against the exercise of discretionary denial.

2. *Factor 2: proximity of the court's trial date to the Board's projected statutory deadline for a final written decision*

Patent Owner argues that, before the parallel district court proceeding was stayed, trial was set for June 2025, approximately 1.5 months before the projected statutory deadline for issuance of a final written decision in this proceeding. Prelim. Resp. 65 (citing Ex. 2005, 1). Patent Owner adds that:

If the Board denies institution and the matter proceeds with an approximate delay of 3.5 to 4 months from the previous schedule, the District Court action will head to trial on or about December 2025. Moreover, the District Court can hear not only Petitioner's invalidity defense but can resolve infringement and damages. Especially in light of Petitioner's failure to offer a *Sotera* stipulation, it is more efficient to allow this matter to proceed in District Court.

Id. at 65–66.

In reply, Petitioner notes that "[t]he district court . . . vacated the June 2025 trial along with all other deadlines in the case." Prelim. Reply 1 (citing Ex. 2004, 8). Indeed, the district court has vacated all remaining deadlines, which would include the previously-set trial date. Ex. 2004, 8. As such, there is no trial date currently set in the parallel district court proceeding. Should this proceeding be instituted, any trial date would be after the issuance of a final written decision. Furthermore, the district court ordered the stay pending the outcome of seven IPR proceedings, not just this

proceeding. *Id.* at 1–2, 8. Thus, Patent Owner’s suggestion that the trial would occur in December 2025 (which would be approximately three months after the projected statutory deadline for issuance of a final written decision in this proceeding) is purely speculative.

Accordingly, we determine that this factor strongly weighs against the exercise of discretionary denial.

3. Factor 3: investment in the parallel proceeding by the court and the parties

If, at the time of the institution decision, the district court has issued substantive orders related to the challenged patent, such as a claim construction order, this fact weighs in favor of denial. *See Fintiv*, Paper 11 at 9–10. On the other hand, if the district court has not issued such orders, this fact weighs against discretionary denial. *Id.* at 10.

Petitioner asserts that “[o]ther than initial motion practice and preliminary contentions, the parties have invested little in the litigation.” Pet. 73. Petitioner also argues that “[a]s the district court observed, the litigation ‘is in its early stages,’ [Petitioner’s] motion to dismiss is still pending, only ‘minimal documents’ have been exchanged, and no depositions have occurred.” Prelim. Reply 6 (citing Ex. 2004, 5).

Patent Owner contends that “[t]he parties served invalidity and infringement contentions over six months and two months ago respectively,” “were in the midst of claim construction briefing when the Court stayed the case,” and “[f]act discovery in the parallel litigation was underway and could efficiently be resumed if the stay is lifted.” Prelim. Resp. 61 (citing Ex. 2005, 1–2; Ex. 2006).

We agree with the district court’s assessment that the parallel proceeding was “in its early stages” at the time of the stay. Ex. 2004, 5. The

record before us indicates that the district court has not issued any substantive orders. The district court specifies that “at the time Defendant filed its motion to stay, the close of fact discovery was more than five months away, the close of expert discovery was almost nine months away, the *Markman* hearing was four months away, and trial was nearly 16 months away.” *Id.*

Based on the record before us, this factor weighs against exercising our discretion to deny institution.

4. *Factor 4: overlap between issues raised in the petition and in the parallel proceeding*

Petitioner argues that a trial in this proceeding would address claims that the district court will not address because Patent Owner is asserting only a subset of challenged claims 1–19 in the parallel proceeding. Pet. 73 (citing Ex. 1021). According to Petitioner, this fact weighs against us exercising discretion to deny institution. *Id.* (citing *Markforged Inc. v. Continuous Composites*, IPR2022-00679, Paper 7 at 32–33 (Oct. 25, 2022)).

Patent Owner argues that “Petitioner has attacked the validity of the challenged claims in view of the same prior art addressed here.” Prelim. Resp. 67 (citing Ex. 2006, 9–10). In addition, Patent Owner contends that the Board should exercise its discretion to deny institution because Petitioner has not offered a *Sotera* stipulation. *Id.* at 63 (citing *Zhuhai Cosmox Battery Co., Ltd. v. Ningde Ampere Technology Limited*, IPR2023-00587, Paper 12 at 15, 27 (PTAB Sept. 22, 2023) (“*Zhuhai*”)).

In reply, Petitioner argues that the *Zhuhai* decision cited by Patent Owner is distinguishable from the current case because it does not involve a stay. Prelim. Reply 7 (citing *Zhuhai* at 9). Petitioner also argues that “a *Sotera* stipulation is not ‘a prerequisite for institution.’” *Id.* (citing *Zhuhai*

Cosm Battery Co. v. Maxell, Ltd., IPR2022-00984, Paper 8 at 4 (Sept. 29, 2022)).

In its Sur-reply, Patent Owner concedes that “[a] *Sotera* stipulation may not be a ‘prerequisite’ for institution,” but maintains that “Petitioner’s refusal to file one undercuts the relevance of the stay to the Board’s exercise of discretion under *Fintiv*,” and concludes that “[t]he Board should give less weight to the stay due to Petitioner’s failure to file a *Sotera* stipulation.”

Prelim. Sur-reply 6.

We do not find Patent Owner’s arguments persuasive. Patent Owner has mischaracterized the *Zhuhai* decision. The petitioner in that case provided a stipulation that was narrower than a *Sotera* stipulation. *Zhuhai* at 15. Nevertheless, the Board determined that the fourth *Fintiv* factor weighed against denial of institution. *Id.* The Board did indicate that the petitioner did not submit “a *Sotera*-type stipulation that would make discretionary denial inappropriate under the [Director] Memo” in its discussion of balancing the *Fintiv* factors (*see id.* at 27), but this statement does not support Patent Owner’s assertion that the Board should exercise its discretion to deny institution because Petitioner has not offered a *Sotera* stipulation. Indeed, as Patent Owner concedes in its Sur-reply, a *Sotera* stipulation is not a “prerequisite” for institution. Furthermore, for the reasons discussed above in connection with factor one, we are not persuaded that failure to file a *Sotera* stipulation undercuts the relevance of the stay.

Here, despite the absence of a stipulation, the projected statutory deadline for a final written decision will predate any trial date in the parallel district court litigation in light of the stay. As such, any overlap in issues will serve to streamline the issues in the litigation, as opposed to creating duplication or redundancy.

In view of this determination and because additional claims are challenged here that are not at issue in the parallel district court proceeding, we determine that this factor weighs against the exercise of discretionary denial.

5. Factor 5: whether the petitioner and the defendant in the parallel proceeding are the same party

Petitioner admits that it is the defendant in the parallel proceeding. Pet. 73. Because of this admission, Patent Owner argues that this factor weighs in favor of denial. Prelim. Resp. 67 (citing *Cisco Sys., Inc. v. Oyster Optics, LLC*, IPR2021-00238, Paper 10 at 16–17). In view of the stay, however, Petitioner asserts that “this factor now weighs firmly against discretionary denial because the Board will reach a final written decision before any jury trial.” Prelim. Reply 7 (citing *Beckman* at 24).

In *Beckman*, the Board stated that factor five “favors denial if trial precedes the Board’s Final Written Decision and favors institution if the opposite is true.” *Beckman* at 24 (quoting *Huawei Tech. Co. v. WSOU Inv., LLC*, IPR2021-00225, Paper 11 at 14 (PTAB June 14, 2021)). The Board then determined that factor five weighs against exercising discretion to deny institution under § 314(a) because the final written decision in that case was likely to precede trial in the parallel district court proceeding in view of the order staying the parallel proceeding. *Id.*

Similarly, in this proceeding, the final written decision is likely to precede trial in the parallel district court proceeding because of the stay issued in the parallel proceeding. Accordingly, this factor does not weigh in favor of exercising our discretion to deny institution.

6. *Factor 6: other circumstances that impact the Board’s exercise of discretion, including the merits*

Patent Owner argues that the asserted grounds are not strong and should be denied on the merits. Prelim. Resp. 68. Petitioner does not address this factor in the Petition or the Preliminary Reply.

As discussed below, we determine that the merits of the Petition meet the standard for institution. *See infra* §§ III.D, IIIE. Accordingly, we determine that this factor is neutral.

7. *Conclusion*

We have considered the circumstances and facts before us in view of the *Fintiv* factors, none of which favor discretionary denial. We take “a holistic view of whether efficiency and integrity of the system are best served by denying or instituting review” when evaluating these factors. *Fintiv* at 6. Evaluating all of the factors on this record, we determine that the circumstances presented here do not support exercising our discretion under 35 U.S.C. § 314(a) to deny *inter partes* review.

D. *Asserted Anticipation Based on Rosenberg-I*

Petitioner asserts that claims 1–19 are anticipated by Rosenberg-I. Pet. 49–66. Patent Owner provides arguments addressing this asserted ground of unpatentability. Prelim. Resp. 49–54.

1. *Rosenberg-I (Ex. 1009)*

Rosenberg-I is directed to “devices used to interface with computer system[s] and electronic devices and which provide haptic feedback to the user.” Ex. 1009, 1:20–22. Figure 1 of the ’846 patent is reproduced below.

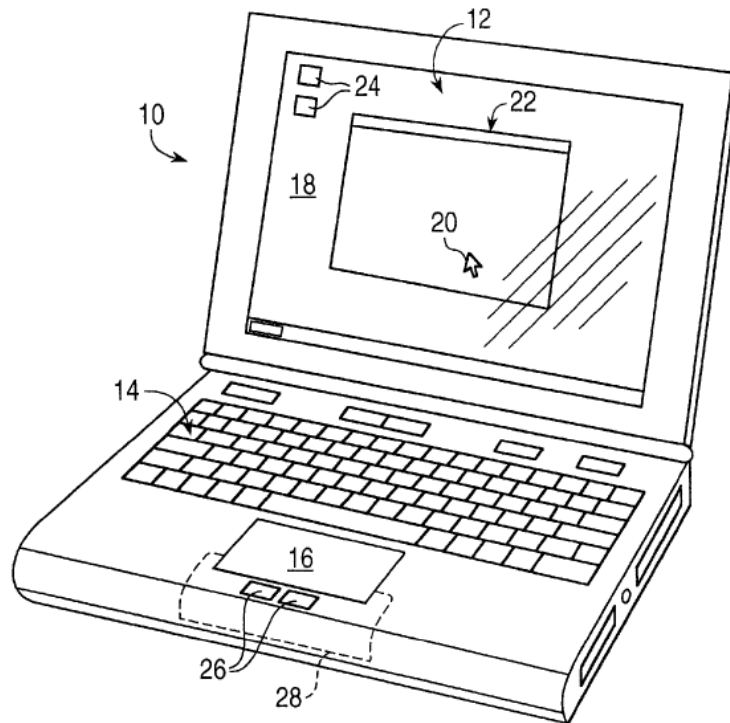


FIG. 1

Figure 1 is a perspective view of portable computer 10 including a haptic touchpad. *Id.* at 3:31–32. Portable computer 10 includes display device 12, keyboard 14, and touchpad 16. *Id.* at 3:39–43. Touchpad 16 inputs coordinate data to the main processor of computer 10 based on the sensed location of an object on or near the touchpad. *Id.* at 4:6–8. “[T]ouchpad 16 is provided with the ability to output haptic feedback such as tactile sensations to the user who is physically contacting the touchpad.” *Id.* at 4:65–67. For instance, “one or more moveable portions 28 of the housing of the computer device 10 can be included which is contacted by the user when the user operates the touchpad 16 and which can provide haptic feedback.” *Id.* at 5:56–60.

In one embodiment, one or more piezoelectric actuators 42 are coupled to the underside of touchpad 16 to provide haptic feedback to the user. *Id.* at 7:21–25, Fig. 3.

2. *Independent Claim 1*

Petitioner contends that Rosenberg-I discloses each limitation of independent claim 1. Pet. 51–57. To support its arguments, Petitioner identifies certain passages in Rosenberg-I and explains their significance with respect to the corresponding claim limitation. *Id.* Patent Owner argues that Rosenberg-I does not disclose either one of the “manipulation of an input device configured to control a plurality of systems” limitation or the “receiving a detent profile associated with one of the systems” limitation. Prelim. Resp. 49–54.

We have reviewed Petitioner’s contentions with respect to the limitations of claim 1, and for the reasons discussed below, we determine that the Petition shows a reasonable likelihood that Petitioner would prevail in demonstrating that claim 1 is anticipated by Rosenberg-I. *See* Pet. 51–57. We address Patent Owner’s arguments below.

a) *The “Manipulation of an Input Device Configured to Control a Plurality of Systems” Limitation*

Claim 1 recites “receiving an input signal comprising information associated with a *manipulation of an input device configured to control a plurality of systems.*” Ex. 1001, 15:3–5 (emphasis added). In addressing this limitation, Petitioner argues that Rosenberg-I’s touchpad 16 inputs a position signal to the processor of computer 10 based on the location of user contact on the touch surface. Pet. 51–52 (citing Ex. 1009, Abstract, 2:8–12, 4:6–8, 15:27–34, claim 37; Ex. 1003 ¶¶ 298–299). Petitioner asserts that, in the parallel district court proceeding, “[Patent Owner] has taken the position

that “*a plurality of systems*” includes two different software applications running on the same device, *e.g.*, a web-browsing application and [a] gaming application running on one videogame device.” *Id.* at 52 (citing Ex. 1021; *10X Genomics, Inc. v. Bio-Rad Labs*, IPR2020-00086, Paper 8 at 19 (Apr. 27, 2020) (“[J]udicial efficiency will be enhanced by allowing Petitioner to rely upon a claim construction that Patent Owner is relying upon . . . to assert infringement.”)). Petitioner then asserts that, under this interpretation, touchpad 16 is configured to control a plurality of systems “because computer 10 runs multiple different applications, including a web-browser and a gaming application, and the touchpad controls the user’s interaction with each application.” *Id.* at 52–53 (citing Ex. 1009, Abstract, 4:43–64, 6:7–23; Ex. 1003 ¶¶ 300–302).

Patent Owner argues that Rosenberg-I fails to teach this limitation because touchpad 16¹⁰ “has only one common configuration for a mouse cursor to interact with graphical user interface elements and control any number of different applications using the same cursor.” Prelim. Resp. 49. Based on arguments made by the applicants during the prosecution of the ’042 patent, Patent Owner contends that “the claims cover an input device configured to control a plurality of systems, including by receiving a system-specific detent profile for each of the controlled systems.” *Id.* at 49–50 (citing Ex. 1002, 213–14; Ex. ¶ 118). Patent Owner then argues that Rosenberg-I “does not disclose an input device configured to control a plurality of systems with system-specific detent profiles, *e.g.*, a trackpad with virtual controls with system-specific configuration.” *Id.* at 50.

¹⁰ We believe that Patent Owner’s references to “Rosenberg I’s trackpad” refer to touchpad 16.

According to Patent Owner, Rosenberg-I “merely discloses a mouse cursor that is system-unaware” and “only configured to control the cursor, regardless of which application” is running. *Id.* at 50–51 (citing Ex. 1009, 11:23–29; Ex. 2001 ¶ 119).

At this stage, we disagree with Patent Owner’s arguments. The fact that Rosenberg-I’s input device controls the same cursor in the same manner regardless of which application is running does not show that the several different software applications that Rosenberg-I discloses running on host computer 12 (Ex. 1009, 6:7–23) do not comprise a plurality of systems. Although each of these software applications is disclosed as using input from touchpad 16, Patent Owner has not pointed to any indication that they are not distinct applications that run independently of one another. *Id.*

Instead, we are persuaded at this stage by Petitioner’s assertion that, because Rosenberg-I’s touchpad 16 controls the various software applications, it is configured to control a plurality of *systems*. *See* Pet. 52–53. This interpretation of “systems” is consistent with Patent Owner’s alleged position that “a plurality of systems” includes two different software applications running on the same device (*see* Ex. 1021, 2), which Patent Owner does not dispute here. Specifically, in its preliminary infringement contentions in the parallel district court proceeding, Patent Owner indicated that the accused product satisfied the relevant limitation of claim 1 because it “includes multiple exemplary systems, including the various modes, games, and menu navigations that can be controlled with a touch-pad.” *Id.*

For the above reasons, we determine on the current record that Petitioner has made a sufficient showing that Rosenberg-I discloses the limitation recites “receiving an input signal comprising information

associated with a manipulation of an input device configured to control a plurality of systems.”

b) *The “Receiving a Detent Profile Associated with One of the Systems” Limitation*

Claim 1 recites “receiving a detent profile associated with one of the systems.” Ex. 1001, 15:7–8. For this limitation, Petitioner argues that Rosenberg-I’s haptic feedback provides a virtual detent because it mimics a mechanical detent. Pet. 53–54 (citing Ex. 1009, 12:29–32, 12:57–59; Ex. 1001, 6:13–19, 11:55–63, 13:47–53, Fig. 9A; Ex. 1003 ¶ 306).

Petitioner also argues that Rosenberg-I incorporates by reference U.S. Patent No. 5,734,373 (Ex. 1010, “Rosenberg-II”). *Id.* at 50 (citing Ex. 1009, 6:49–54; Ex. 1003 ¶¶ 291–293). Petitioner contends that Rosenberg-II discloses employing “force values that have been previously calculated or sampled and stored as a digitized ‘**force profile**’ in memory,” and “Figures 10–13 and 15–16 depict various force ‘profiles,’ including one that provides a ‘detent sensation.’” *Id.* at 51 (citing Ex. 1010, 5:48–62, 18:46–50, 38:1–3; Ex. 1003 ¶¶ 294–295).

Next, Petitioner argues that in view of the incorporation by reference of Rosenberg-II, “Rosenberg-I . . . discloses that its haptic feedback, *i.e.*, simulated detents, is generated using “force **profiles**” stored in memory, . . . and each profile would have been associated with one of the mimicked mechanical detents discussed above “*associated with*” one or more systems that Rosenberg-I controls.” Pet. 54 (citing Ex. 1010, 18:46–67, 35:42–46, claims 41–43, Figs. 10a–16; Ex. 1003 ¶ 311).

According to Petitioner, “Rosenberg-I’s processor receives a particular ‘force profile’ stored in memory on the computer in response to a user interaction with a software program being controlled and uses that

profile to command an actuator to output a particular virtual detent.” *Id.* at 55–56 (citing Ex. 1009 6:3–41, 15:11–17, claim 38; Ex. 1003 ¶ 315). As an example, Petitioner argues that “when a user uses the touchpad to increase the volume of a videogame that computer 10 is controlling, the processor accesses a ‘force profile’ associated with that system (*i.e.*, the videogame).” *Id.* at 56 (citing Ex. 1009, 11:28–29, 12:27–49, 13:18–20, 15:19–23; Ex. 1003 ¶ 316).

Patent Owner argues that both Rosenberg-I and Rosenberg-II fail to “disclose this limitation because they disclose profiles associated with user interaction with graphical interface elements; not with each one of the systems.” Prelim. Resp. 52. Patent Owner also argues that neither Rosenberg-I nor Rosenberg-II discloses “an application-specific profile” associated with any of the software applications that Petitioner maps to the claimed systems. *Id.*

Specifically, Patent Owner asserts that Rosenberg-I only contemplates forces that are associated with interactions with user interface elements. *Id.* at 53 (citing Ex. 1009, 11:23–29, 12:5–6, 12:27–49, 13:18–20, 15:19–23; Ex. 2001 ¶¶ 121–122). According to Patent Owner, Rosenberg-I’s “forces are not customized in any way that is unique to each different system or application,” “[t]here is nothing unique about the cursor’s configuration as to specific applications,” and “[t]here is no specially configured input device unique to an application.” *Id.* In view of these assertions, Patent Owner argues that “there is no unique detent profile associated with an application.” *Id.*

At this stage, we disagree with these arguments. The claim language in question requires only that the detent profile be “associated with one of the systems.” Claim 1, which is an open-ended claim, does not require a

“unique” or “application-specific” association between the detent profile and one of the systems. The detent profile is not required to have a unique association with only *one* of the systems and not with any of the other systems; there is no requirement that each one of the plurality of systems be associated with its own unique detent profile. Rather, the detent profile need only be associated with at least one of the systems and could be associated with multiple systems.

For the above reasons, we determine on the current record that Petitioner has made a sufficient showing that Rosenberg-I discloses the limitation reciting “receiving a detent profile associated with one of the systems.”

c) The Remaining Aspects of Petitioner’s Contentions

Patent Owner does not offer any arguments specifically addressing the remaining limitations of claim 1. *See generally* Prelim. Resp. We have reviewed Petitioner’s contentions with respect to the remaining limitations of claim 1 and determine that the Petition provides a sufficient showing, at this stage of the proceeding, that Rosenberg-I discloses each limitation. *See* Pet. 51–57.

d) Preliminary Determination as to Claim 1

Based on our review and consideration of the current record, we determine that the information presented sufficiently supports, for purposes of institution, Petitioner’s assertions that Rosenberg-I discloses each of the limitations of claim 1. We therefore determine Petitioner has met its burden to show a reasonable likelihood it would prevail in demonstrating that claim 1 is anticipated by Rosenberg-I.

3. Independent Claims 9, 10, 14, and 15

For each of independent claims 9, 10, 14, and 15, Petitioner largely relies on its contentions for the limitations of claim 1, adding, for example, that Rosenberg-I not only discloses a method but also a computer-readable medium and a system. Pet. 61–65 (additionally citing Ex. 1003 ¶¶ 338–368).

Patent Owner presents arguments regarding claim 1 only and does not offer any arguments specifically addressing claims 9, 10, 14, and 15. *See* Prelim. Resp. 49–54. We have reviewed Petitioner’s contentions with respect to claims 9, 10, 14, and 15 and determine that the Petition provides a sufficient showing, at this stage of the proceeding, that Rosenberg-I discloses each limitation. *See* Pet. 49–54.

Accordingly, we determine, based on the current record, that the Petition shows a reasonable likelihood that Petitioner would prevail in demonstrating that claims 9, 10, 14, and 15 are anticipated by Rosenberg-I.

4. Dependent Claims 2–8, 11–13, and 16–19

Claims 2–8 depend from claim 1, claims 11–13 depend from claim 10, and claims 16–19 depend from claim 15. Ex. 1001, 15:14–32, 16:5–14, 16:45–54. Because Petitioner has demonstrated a reasonable likelihood of success in proving that at least one claim of the ’042 patent is unpatentable, we institute on all grounds and all claims raised in the Petition. *See SAS*, 138 S. Ct. at 1354, 1359–60; *see also PGS Geophysical AS v. Iancu*, 891 F.3d 1354, 1360 (Fed. Cir. 2018) (interpreting 35 U.S.C. § 314 to require “a simple yes-or-no institution choice respecting a petition, embracing all challenges included in the petition”); 37 C.F.R. § 42.108(a) (“When instituting inter partes review, the Board will authorize the review to proceed on all of the challenged claims and on all grounds of unpatentability asserted

for each claim.”). Therefore, it is not necessary for us to assess every claim challenged by Petitioner.

Nevertheless, we note that Petitioner provides reasonable and detailed explanations indicating where Rosenberg-I teaches or suggests the limitations of claims 2–8, 11–13, and 16–19. Pet. 49–57. Patent Owner offers no particular arguments regarding claims 2–8, 11–13, and 16–19 for us to consider at this stage of the proceeding. *See* Prelim. Resp. 57–61, 63–64, 65–66. We have reviewed Petitioner’s contentions with respect to these claims and determine that the information presented in the Petition establishes that there is a reasonable likelihood that Petitioner would prevail in its assertion that claims 2–8, 11–13, and 16–19 are anticipated by Rosenberg-I.

E. Alternate Grounds

Petitioner submits three alternate grounds challenging claims 1–19. Specifically, Petitioner asserts that claims 1–19 are unpatentable based on (1) Ichinose and Levin (Pet. 10–31); (2) Wang and Ichinose (*id.* at 32–49); and (3) Rosenberg-I and Goldenberg (*id.* at 54–61). Because we have already determined that Petitioner has established a reasonable likelihood that at least one claim is unpatentable, we include these grounds in the instituted *inter partes* review. *SAS*, 138 S. Ct. at 1359–60; *PGS Geophysical*, 891 F.3d at 1360; 37 C.F.R. § 42.108(a). We provide the following comments on these alternative grounds.

1. Asserted Obviousness Based on Ichinose and Levin

Petitioner contends that the proposed combination of Ichinose and Levin discloses the limitations of independent claim 1. Pet. 17–21. Petitioner also asserts reasons to combine the relied-upon aspects of Ichinose and Levin with a reasonable expectation of success. *Id.* at 13–17. In

particular, Petitioner contends that one of ordinary skill in the art would have “had reasons to implement Ichinose’s system such that it used Levin’s ‘force detents’ to simulate common mechanical detents like a simple mechanical ‘click.’” *Id.* at 13 (citing Ex. 1001, 6:16–17; Ex. 1015, 8:41–43, 11:59–63; Ex. 1003 ¶ 116).

Ichinose discloses touchpad 10 mounted on steering wheel 16 in a vehicle and having an array of discrete touchable areas 14. Ex. 1015, 2:22–29, Figs. 1A, 1B. “The touchpad 10 generates signals in response to touch patterns on the discrete touchable areas 14. The user may input the touch patterns with a finger 16 or a thumb. For example, the user may slide the finger 16 across the discrete touchable areas 14 in the direction indicated by the arrow 18.” *Id.* at 2:29–34, Fig. 1B. Ichinose also discloses feedback device 80 for producing vibration in touchpad 10. *Id.* at 4:5–23. Levin discloses control panel 12 for a vehicle that includes control knobs 18 and slider 32 that incorporate force feedback. Ex. 1016, 4:9–12, 4:9:52–54, 5:30–50, 7:7–14, 9:60–10:10, 14:16–21, Fig. 1.

Regarding the claim 1 limitation “receiving a detent profile,” Petitioner argues that “Ichinose-Levin stores Levin’s ‘detent force profiles’ in memory and its ‘command processor’ accesses (i.e., ‘receiv[es]’) those profiles from memory.” *Id.* at 18. Petitioner specifically identifies the detent force profile shown in Figure 6A of Levin as an exemplary profile. *Id.* at 19–20. According to Petitioner, the detent force profile of Figure 6A “results in a ‘click’ detent similar to the ‘clicks’ experienced when sliding mechanical sliders,” and “would have been used with the [proposed] virtual-slider implementation . . . in which successive detents or ‘clicks’ are felt as the radio (or temperature) is changed by pushing the virtual slider.” *Id.* at 20 (citing Ex. 1003 ¶¶ 135–137).

Patent Owner argues that Levin discloses a profile associated with force feedback and *not* vibrotactile feedback. Prelim. Resp. 32–34. In particular, Patent Owner argues that Petitioner “maps Levin’s force feedback profile to the ‘detent profile,’ but fails to show how such force feedback profile includes haptic data associated with *vibrational haptic data*.” *Id.* at 33 (citing Pet. 20).

At this stage, we agree with Patent Owner. We reproduce Levin’s Figure 6A below.

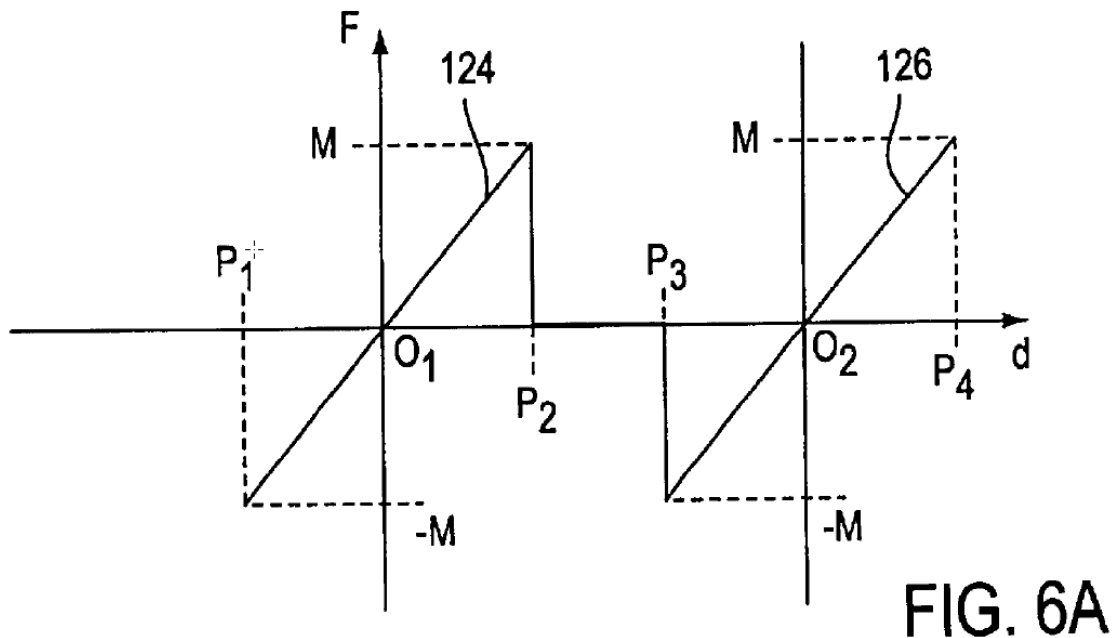


Figure 6A of Levin illustrates a detent force profile “suitable for use with the knobs of device 10.” Ex. 1016, 14:30–32. Vertical axis F represents the magnitude of force output, and horizontal axis d the distance or position of the moved user object, i.e., the knob, in a degree of freedom. *Id.* at 14:36–41. “Origin position O indicates the position of the detent, a positive d is a position past the origin of the detent in one direction, and a negative d is a position past the origin of the detent in the opposite direction.” *Id.*

at 14:41–45. Curve 124 represents the force output for a single detent (origin O1) over a position range for the detent. *Id.* at 14:45–49.

As the knob is rotated toward origin O1 from a position off the origin (i.e., clockwise from position P1 or counterclockwise from position P2), an assisting force is applied to the knob that gradually decreases to zero at origin O1. *Id.* at 14:49–15:2. Similarly, as the knob is rotated away from origin O1 (i.e., clockwise toward position P2 or counterclockwise toward position P1), an resisting force is applied to the knob that increases as the knob is rotated until either position P1 or position P2 is reached (depending on the direction of rotation), at which point the force drops to zero. *Id.*

As such, the detent force profile of Figure 6A does not appear to produce a vibrotactile effect as required by the claim. Based on the current record, we fail to see how or why one of ordinary skill in the art would have applied the assisting and resisting forces from the detent force profile of Figure 6A to touchpad 10 of Ichinose. It is not clear that the Petition explains sufficiently how one of ordinary skill in the art would implement the assisting and resisting forces taught by Levin into Ichinose’s touchpad 16 that is manipulated by the user sliding a finger across. *See* Pet. 18–20; Ex. 1003 ¶¶ 131–139.¹¹

¹¹ We note that our comments here do not rely upon a finding that Levin’s sensations are “force feedback” specifically, and we do not wish to imply that the issue comes down to a debate between “force feedback” versus “vibrotactile” sensations, to the extent there is any difference between the two. Instead, we agree, on this record, with Patent Owner’s argument that the types of sensations provided by Levin appear to be incompatible with the types of sensations provided by Ichinose due to the way in which they are delivered.

Thus, based on the current record, we question whether Petitioner establishes sufficiently that the combination of Ichinose and Levin discloses “receiving a detent profile.”

2. *Asserted Obviousness Based on Wang and Ichinose*

Petitioner contends that the proposed combination of Wang and Ichinose discloses the limitations of independent claim 1. Pet. 35–39. Petitioner also asserts reasons to combine the relied-upon aspects of Wang and Ichinose with a reasonable expectation of success. *Id.* at 34–35. In particular, Petitioner contends that one of ordinary skill in the art would have used Ichinose’s touchpad 10 to implement the haptic device taught by Wang. *Id.* at 34 (citing Ex. 1003 ¶¶ 214–220).

Regarding the claim 1 limitation “generating a vibrotactile signal configured to cause an actuator to produce a vibrotactile effect to the input device, the vibrotactile effect comprising the virtual detent,” Petitioner argues that the Wang-Ichinose combination includes actuators that are driven to emulate detents by command signals output from Wang’s supervisory computer/processor 12. *Id.* at 39 (citing Ex. 1022, 5:1–12, 6:8–21, 7:18–22, 7:26–29, 8:6–9, 8:29–31, 11:24–12:17; Ex. 1003 ¶¶ 233–238). Petitioner then asserts that the command “signals cause the actuator(s) to produce emulated detents, *i.e.*, vibrotactile effects, in accordance with the ‘associated properties’ stored in the ‘control devices/indicator library’ for the virtual control being manipulated.” *Id.*

Patent Owner argues that neither Wang nor Ichinose discloses generating a vibrotactile signal to produce a virtual detent. Prelim. Resp. 46–47 (citing Ex. 2001 ¶¶ 110–112). Patent Owner argues that Petitioner “attempts to gloss over” Wang’s lack of disclosure by “stating:

“these signals cause the actuator(s) to produce emulated detents, i.e., vibrotactile effects.” *Id.* at 47.

At this stage, we agree with Patent Owner that the Petition appears deficient with respect to explaining why Wang’s command signals would generate a vibrotactile signal to emulate detents. Although Ichinose discloses vibrotactile feedback, neither reference appears to disclose using vibrotactile signals to emulate a detent. It is not clear to us that the Petition explains sufficiently why the emulated detents in the proposed combination would be vibrotactile effects. Petitioner cites, but does not discuss, Mr. Ward’s testimony on this point. Pet. 39 (citing Ex. 1003 ¶¶ 233–238).

Thus, based on the current record, we question whether Petitioner establishes sufficiently that the combination of Wang and Ichinose discloses “generating a vibrotactile signal configured to cause an actuator to produce a vibrotactile effect to the input device, the vibrotactile effect comprising the virtual detent.”

3. Asserted Obviousness Based on Rosenberg-I and Goldenberg

Petitioner asserts that claims 1–19 are unpatentable based on Rosenberg-I and Goldenberg. Pet. 66–71. Patent Owner provides arguments addressing this asserted ground of unpatentability. Prelim. Resp. 54–61.

Petitioner asserts this alternative ground “[i]f [Patent Owner] argues that Rosenberg-II’s ‘force profiles’ are not incorporated into Rosenberg-I and/or would not have been obvious to implement in Rosenberg-I.” Pet. 66.

Because Patent Owner has not made such an argument, and we have already determined that Petitioner has established a reasonable likelihood that at least one claim is unpatentable, we do not reach this ground at this time.

IV. CONCLUSION

After considering the evidence and arguments presented by the Parties, we determine that Petitioner has demonstrated a reasonable likelihood of prevailing with respect to at least one of the challenged claims. Thus, we institute an *inter partes* review of all challenged claims on all presented challenges. *SAS*, 138 S. Ct. at 1359–60; *PGS Geophysical*, 891 F.3d at 1360; 37 C.F.R. § 42.108(a).

V. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review is instituted for claims 1–19 of the '042 patent on the unpatentability grounds asserted in the Petition; and

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial, which commences on the entry date of this decision.

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Patent 9,430,042 B2

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